

HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

SERVICE MANUAL

BX-1L CHASSIS

<u>MODEL NAME</u>	<u>REMOTE COMMANDER</u>	<u>DESTINATION</u>	<u>CHASSIS NO.</u>
KV-29FS150	RM-YA005	LATIN NORTH	SCC-S79I-A
KV-29FS150	RM-YA005	LATIN SOUTH	SCC-S79J-A

ORIGINAL MANUAL ISSUE DATE: 1/2007

 :UPDATED ITEM

REVISION DATE

SUBJECT

1/2007
4/2008

No revisions or updates are applicable at this time.
Added new PN for IC IC001. New PN includes software data. Replaced pg. 51.

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KV-29FS150



RM-YA005

TRINITRON® COLOR TELEVISION

SONY®

TABLE OF CONTENTS

SECTION TITLE	PAGE
Specifications	4
Warnings and Cautions	5
Safety Check-Out	6
Self-Diagnostic Function	7
SECTION 1: DISASSEMBLY	10
1-1. Rear Cover Removal	10
1-2. Chassis Assembly Removal	10
1-3. Service Position	11
1-4. Picture Tube Removal	12
Anode Cap Removal Procedure	12
SECTION 2: SET-UP ADJUSTMENTS	13
2-1. Beam Landing	13
2-2. Convergence	14
2-3. Focus Adjustment	15
2-4. Screen (G2)	16
SECTION 3: CIRCUIT ADJUSTMENTS	17
3-1. Remote Adjustment Buttons and Indicators	17
3-2. Accessing the Service Menu	18
3-3. Confirming Service Adjustment Changes	18
3-4. White Balance Adjustments	18
3-5. Picture Quality Adjustments	18
3-6. Service Data	21
SECTION 4: DIAGRAMS	31
4-1. Circuit Boards Location	31
4-2. Printed Wiring Board and Schematic Diagram Information	31
4-3. Block Diagram	32
4-4. Schematics and Supporting Information	33
A Board Schematic Diagram (1 of 6)	33
A Board Schematic Diagram (2 of 6)	34
A Board Schematic Diagram (3 of 6)	35
A Board Schematic Diagram (4 of 6)	36
A Board Schematic Diagram (5 of 6)	37
A Board Schematic Diagram (6 of 6)	38
CV Board Schematic Diagram	40
H2 Board Schematic Diagram	42
4-5. Semiconductors	44
SECTION 5: EXPLODED VIEWS	45
5-1. Chassis	45
5-2. Picture Tube	46
SECTION 6: ELECTRICAL PARTS LIST	47

SPECIFICATIONS

	KV-29FS150
Power Requirements	120V 60Hz
Number of Inputs/Outputs	
Video ¹⁾	2
S Video ²⁾	1
Y, P _B , P _R ³⁾	1
Audio ⁴⁾	2
VHF/UHF	1
Headphone	1
Monitor Out	1
Speaker Output (W)	10W x 2
Power Consumption (W)	
In Use (Max)	165W
In Standby (Max) ⁵⁾	<1W
Dimensions (W x H x D)	
mm	774 x 590 x 506 mm
in	30 ^{1/2} x 23 ^{1/4} x 20 in
Mass	
kg	48.4 kg
lbs	106.6 lbs

1) 1 Vp-p 75 ohms unbalanced, sync negative

2) Y: 1Vp-p 75 ohms unbalanced, sync negative

C: 0.286 Vp-p (Burst signal), 75 ohms

3) Y: 1.0 Vp-p, 75 ohms, sync negative; PB: 0.7 Vp-p, 75 ohms;

PR Vp-p, 75 ohms.

4) 500 mVrms (100% modulation), Impedance: 47 kilohms

Television system

American TV standard, NTSC

Channel coverage

VHF: 2-13/UHF: 14-69/CATV: 1-125

Antenna

75-ohm external antenna terminal for VHF/UHF

Picture tube

FD Trinitron[®] tube

Visible screen size

27-inch picture measured diagonally

Actual screen size

29-inch measured diagonally

Supplied Accessories

Remote Commander RM-YA005

Two Size AA (R6) Batteries

Trademarks and Copyrights



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Design and specifications are subject to change without notice.

WARNINGS AND CAUTIONS

CAUTION


Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield, or carbon painted on the CRT, after removing the anode.

WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the AC power line.



SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and  mark on the schematic diagrams, exploded views, and in the parts list are critical for safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

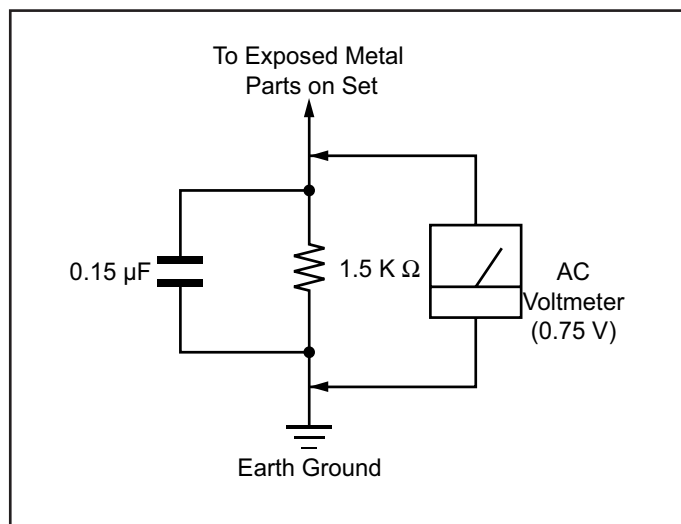


Figure A. Using an AC voltmeter to check AC leakage.

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

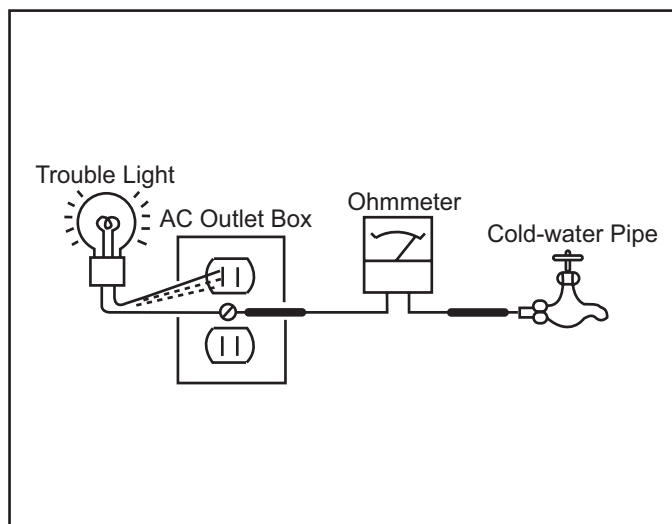


Figure B. Checking for earth ground.

SELF-DIAGNOSTIC FUNCTION



The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY LED indicator will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY LED flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the Remote Commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. Diagnostic Test Indicators

When an error occurs, the STANDBY LED indicator will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the indicator will identify the first of the problem areas.

Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".

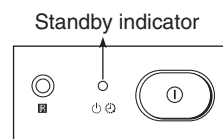
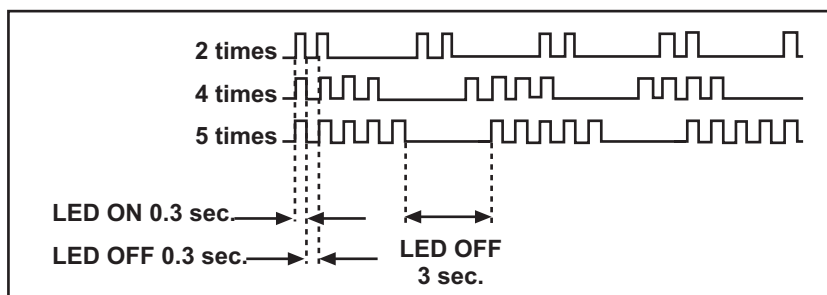
Diagnosis Item Description	No. of times STANDBY Indicator flashes	Diagnostic Result on screen display	Probable Cause Location	Detected Symptoms
• No Power	Does not light	—	<ul style="list-style-type: none"> Power cord is not plugged in. Fuse is burned out (F4101) (H2 Board) 	<ul style="list-style-type: none"> Power does not turn on. No power is supplied to the TV. AC power supply is faulty.
• +B overcurrent (OCP)	2 times	2 OCP:0 2 OCP:1 ~ 255	<ul style="list-style-type: none"> H.OUT (Q511) is shorted. (A board) IC751 is shorted. (CV Board) 	<ul style="list-style-type: none"> Power does not turn on. Load on power line is shorted.
• Vertical NG.	4 times	4 VSTOP:0 4 VSTOP:1 ~ 255	<ul style="list-style-type: none"> +13V is not supplied. (A Board) IC503 voltage list is faulty. (A Board) 	<ul style="list-style-type: none"> Has entered standby state after horizontal raster. Vertical deflection pulse is stopped. Power line is shorted or power supply is stopped.
• IK (AKB)	5 times	5 AKB:0 5 AKB:1 ~ 255	<ul style="list-style-type: none"> Video OUT (IC751) is faulty. (CV Board) IC001 is faulty. (A Board) Screen (G2) is improperly adjusted. 	<ul style="list-style-type: none"> No raster is generated. CRT cathode current detection reference pulse output is small.
• Supply Voltage Protection	8 times	8 SUP:0 8 SUP:1 ~ 255	<ul style="list-style-type: none"> IC604 faulty. IC607 faulty. 	<ul style="list-style-type: none"> No power supply to CRT ANODE. No RASTER is generated.

*One flash count is not used for self-diagnostic.

*If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously. The symptom that is diagnosed first by the microcontroller is displayed on the screen.

**Refer to Screen (G2) Adjustments in Section 2-4. of this manual.

2. Display of STANDBY LED Flash Count



3. Stopping the STANDBY LED Indicator Flash

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY LED Indicator from flashing.

4. Self-Diagnostic Screen Display

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of failure on the screen for confirmation.

To Bring Up Screen Test

In standby mode, press buttons on the Remote Commander sequentially, in rapid succession, as shown below:



The following screen will be displayed indicating the error count:

SELF DIAGNOSTIC		
2	OCP	: 0
3	OVP	: N/A
4	VSTOP	: 0
5	AKB	: 1
8	SUP	: 0
101	WDT	: N/A
SERIAL: FFFFFFFF		
MODEL: FFFFFFFF		

Number “0” means that no fault was detected.

Number “1” means a fault was detected one time only.

Handling of Self-Diagnostic Screen Display

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”. Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

Clearing the Result Display

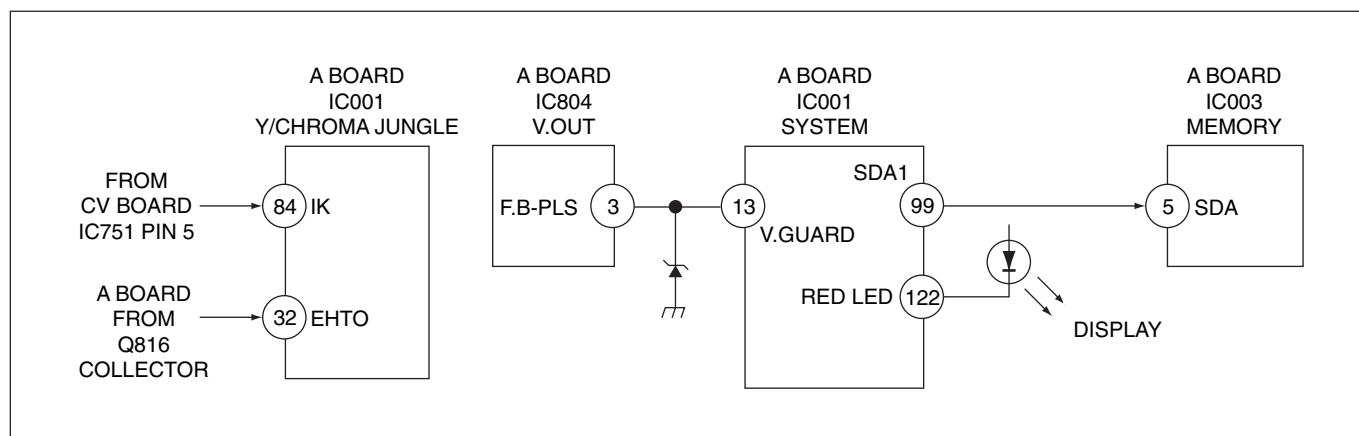
To clear the result display to “0”, press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:



Quitting the Self-Diagnostic Screen

To quit the entire self-diagnostic screen, turn off the power switch on the Remote Commander or the main unit.

Self-Diagnostic Circuit

**+B overcurrent (OCP)**

Occurs when an overcurrent on the +B (135V) line is detected by pin 32 of IC001 (A Board). If the voltage of pin 32 of IC001 (A Board) is more than 4V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

V-Protect

Occurs when an absence of the vertical deflection pulse is detected by pin 13 of IC001 (A Board). Power supply will shut down when waveform interval exceeds 2 seconds.

IK (AKB)

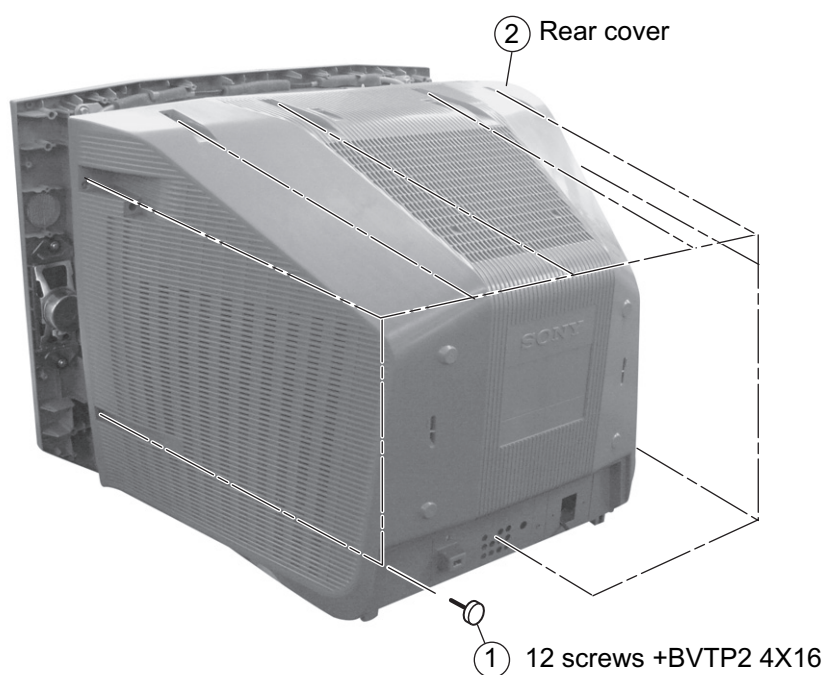
If the RGB levels* do not balance within 15 seconds after the power is turned on, this error will be detected by IC001 (A Board). TV will stay on, but there will be no picture.

Power Supply NG (+5V) for Video Processor

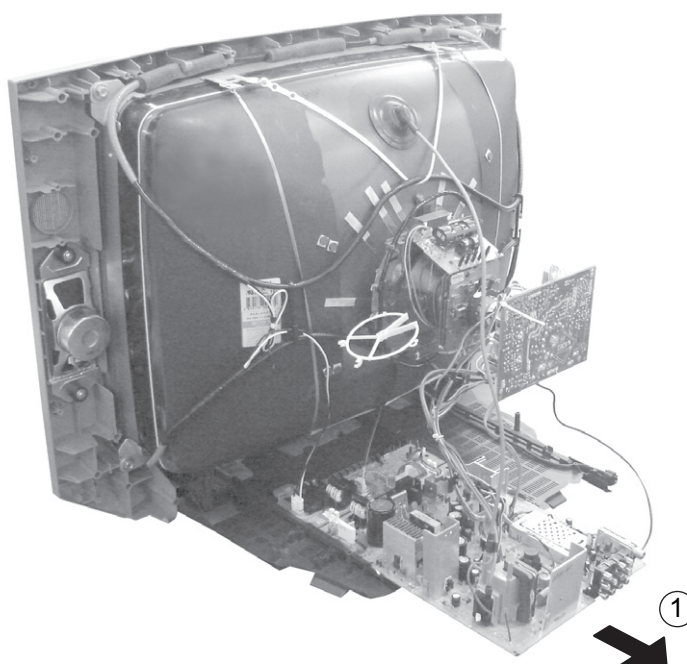
Occurs when IC001 internal HV protect detects an abnormal H-Pulse (frequency) due to improper power supply to IC001. The TV cuts off high voltage power of anode CRT. No picture will be detected. eg: faulty IC602 or IC604

SECTION 1: DISASSEMBLY

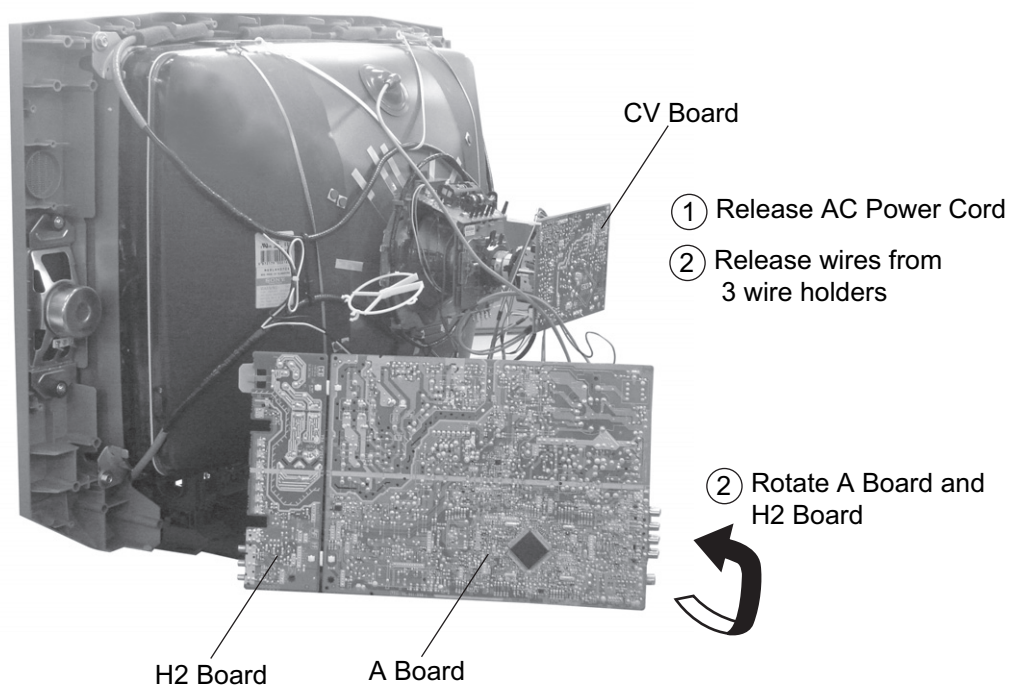
1-1. REAR COVER REMOVAL



1-2. CHASSIS ASSEMBLY REMOVAL



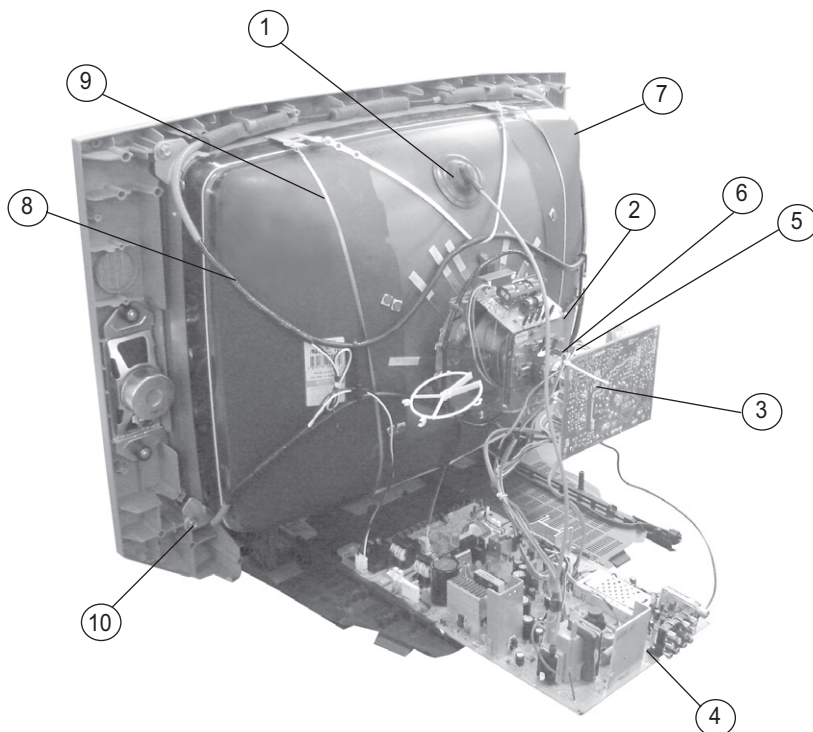
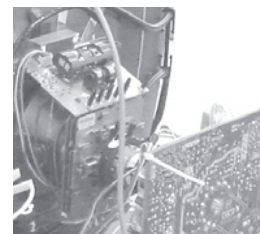
1-3. SERVICE POSITION



1-4. PICTURE TUBE REMOVAL

WARNING: BEFORE REMOVING THE ANODE CAP

High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT before attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.



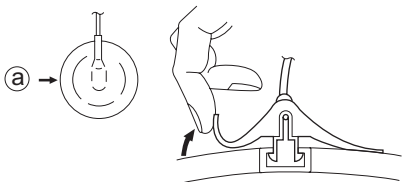
1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the deflection yoke, neck assembly, degaussing coils and CRT grounding strap.
3. Remove the CV Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the neck assembly fixing screw and remove.
6. Loosen the deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the degaussing coil holders.
8. Remove the degaussing coils.
9. Remove the CRT grounding strap and spring tension devices.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT [Take care not to handle the CRT by the neck].

ANODE CAP REMOVAL PROCEDURE

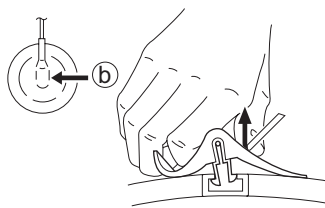
WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT **before** attempting to remove the anode cap. Short between anode and coated earth ground strap of CRT.

NOTE: After removing the anode cap, short circuit the anode of the picture tube and the anode cap to either the metal chassis, CRT shield, or carbon painted on the CRT.

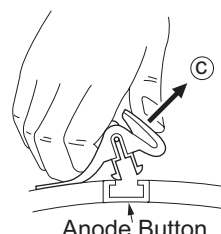
REMOVAL PROCEDURES



Turn up one side of the rubber cap in the direction indicated by arrow (a) .



Use your thumb to pull the rubber cap firmly in the direction indicated by arrow (b) .

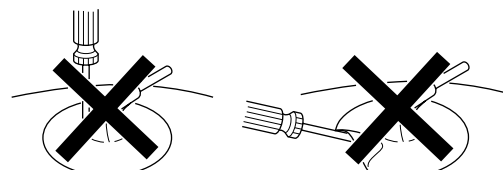


Anode Button

When one side of the rubber cap separates from the anode button, the anode cap can be removed by turning the rubber cap and pulling it in the direction of arrow (c) .

HOW TO HANDLE AN ANODE CAP

1. Do not use sharp objects which may cause damage to the surface of the anode cap.
2. To avoid damaging the anode cap, do not squeeze the rubber covering too hard. A material fitting called a shatter-hook terminal is built into the rubber.
3. Do not force turn the foot of the rubber cover. This may cause the shatter-hook terminal to protrude and damage the rubber.



SECTION 2: SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Set the controls as follows unless otherwise noted:

Picture control NORMAL

Brightness control NORMAL

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance

Note Test Equipment Required:

- | | |
|--------------------------------|--------------------|
| 1. Color Bar Pattern Generator | 5. Oscilloscope |
| 2. Degausser | 6. Landing Checker |
| 3. DC Power Supply | 7. XCV Adjuster |
| 4. Digital Multimeter | |

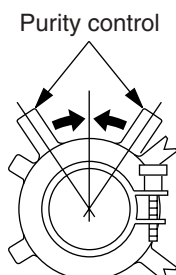
2-1. BEAM LANDING

Before beginning adjustment procedure:

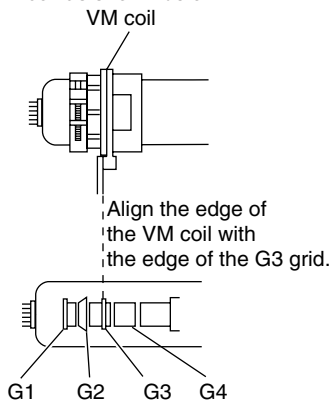
1. Feed in the white pattern signal.
2. In order to reduce the geomagnetism on the set's picture tube, face it east or west.

Adjustment Procedure

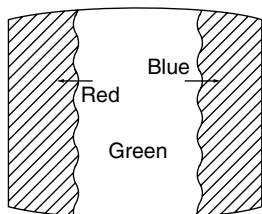
1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke (DY) mounting screw, and set the purity control to the center as shown below:



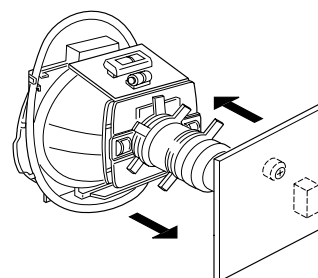
3. Position the VM coil as shown below:



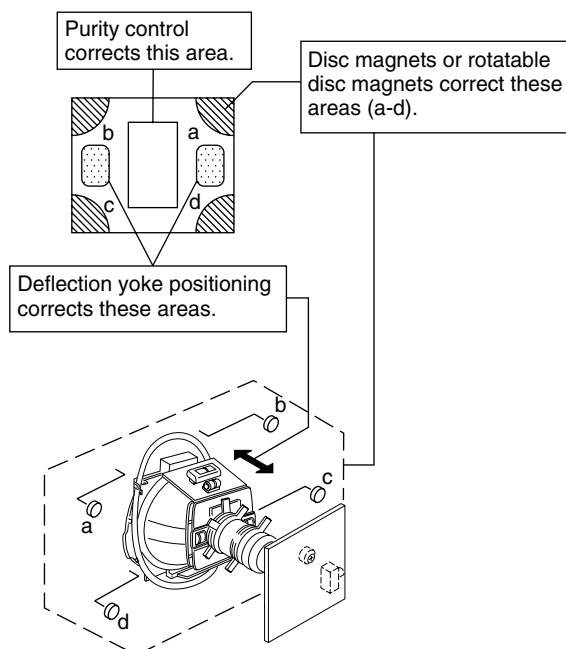
4. Set the raster signal of the pattern generator to green.
5. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are even on both sides.



6. Move the deflection yoke forward, and adjust so that the entire screen becomes green.



7. Switch over the raster signal to red, then blue and confirm the condition.
8. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
9. If landing at the corner is not right, adjust by using the disk magnets.



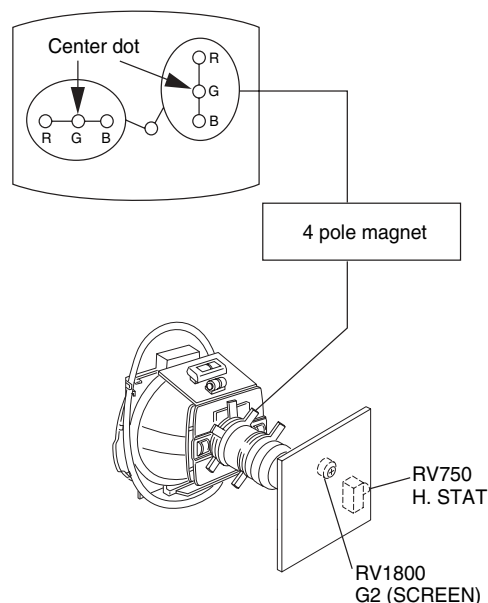
2-2. CONVERGENCE

Before starting convergence adjustments:

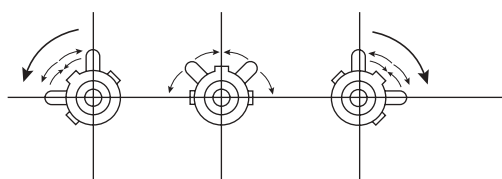
1. Perform FOCUS adjustments.
2. Set Picture mode to "CUSTOM".
3. Feed in dot pattern.

Vertical Static Convergence

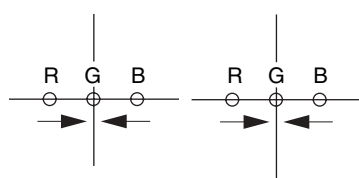
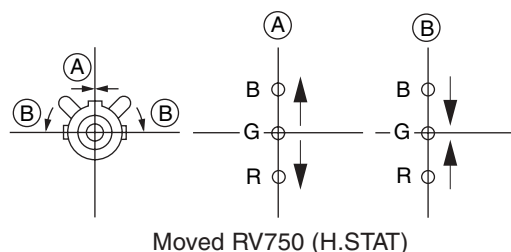
1. Adjust the 4 pole magnet to converge red, green and blue dots in the center of the screen.



2. Tilt the 4 pole magnet and adjust static convergence to open or close the 4 pole magnet.

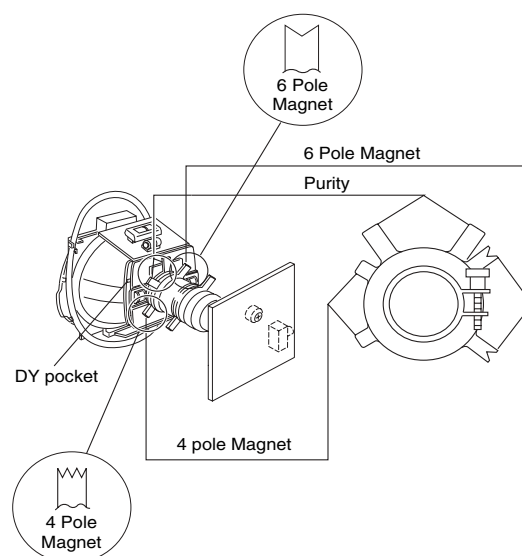
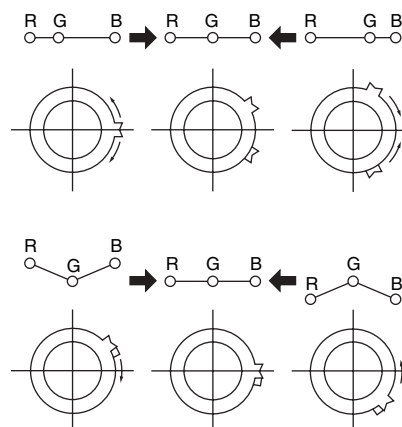


3. When the 4 pole magnet is moved in the direction of arrow (A) and (B), the red, green, and blue dots move as shown below:



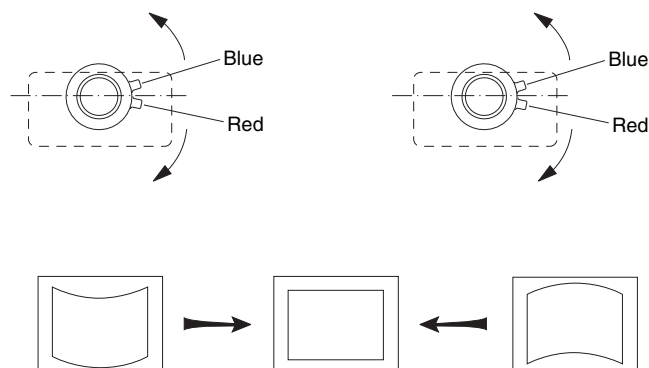
Horizontal Static Convergence

If the blue dot does not converge with the red and green dots, use the 6 pole magnet to adjust as shown:



Y Separation Axis Correction Magnet Adjustment

1. Input cross hatch pattern.
2. Set Picture to "MINIMUM", Brightness to "STANDARD".
3. Adjust the Y separation axis correction magnet on the Neck Assembly so that the horizontal lines at the top and bottom of the screen are straight.



Convergence Rough Adjustment

Before performing this adjustment, perform Horizontal and Vertical Static Convergence Adjustment.

Input cross hatch pattern.

a) TLH

Adjust the horizontal convergence of red and blue dots by inserting TLH Correction Plate to the DY pocket (left or right).

b) YCH

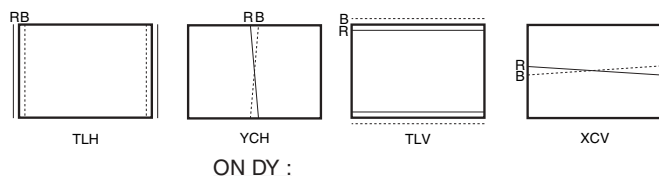
Adjust YCH to balance Y axis.

c) TLV

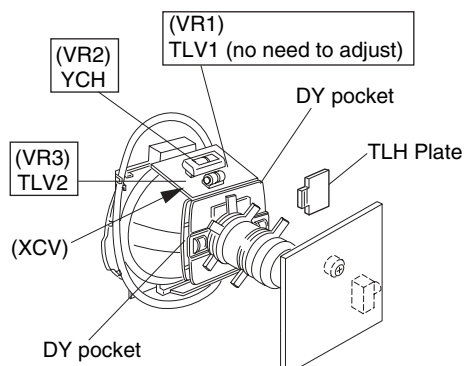
Adjust the vertical convergence of red and blue dots.

d) XCV

Adjust XCV to balance X-axis.

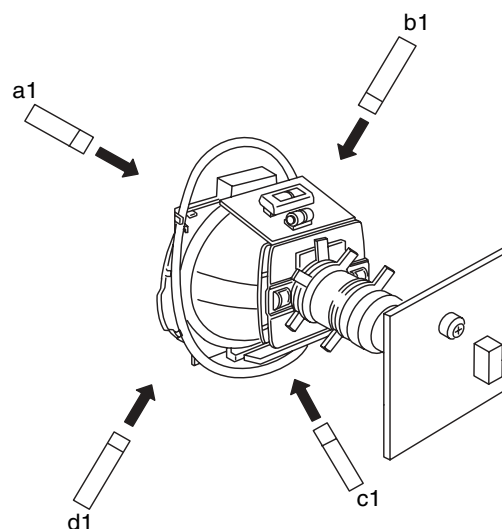
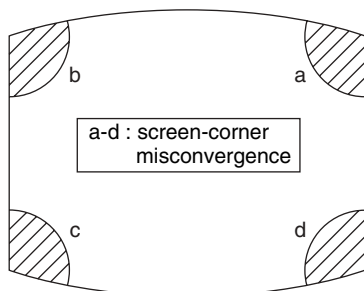


ON DY :



Screen Corner Convergence

Affix a Piece A (110), Convergence Correct/Permaloy Assy Correction to the misconverged areas.

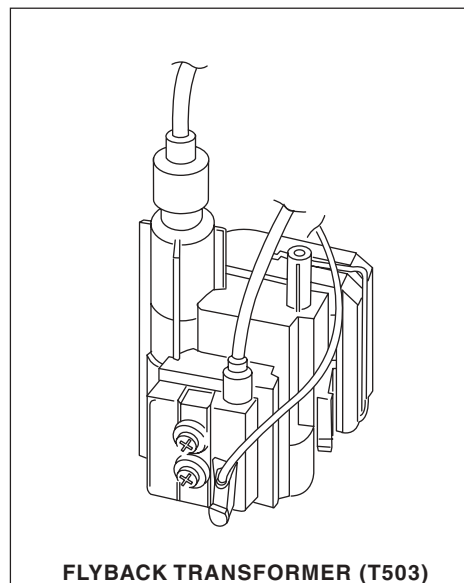


a1~d1: Piece A(110), Convergence Correct
or
Permaloy Assy Correction

2-3. FOCUS ADJUSTMENT

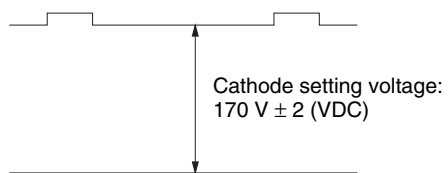
FOCUS adjustment should be completed before White Balance adjustment. (See 3-4. WHITE BALANCE ADJUSTMENT)

1. Receive digital monoscope pattern.
2. Set Picture Mode to "STANDARD".
3. Adjust focus VR to obtain a just focus at the center of the screen.
4. Change the receiving signal to white pattern and blue back.
5. Confirm magenta ring is not noticeable. In case magenta ring is obvious, then adjust FOCUS VR to balance magenta ring and FOCUS.



2-4. SCREEN (G2)

1. Before beginning adjustment procedure:
 - Set Picture and Brightness to "STANDARD".
 - Set TV to Video mode.
 - Set WHBL 016 "RGBB" to 01
2. Connect R, G, B of the CV board cathode to oscilloscope.
3. Adjust Brightness to obtain the cathode value to the value shown below:



4. Adjust SCREEN VR on the FBT until the scanning line disappears.
5. Set WHBL 16 "RGBB" back to 00.

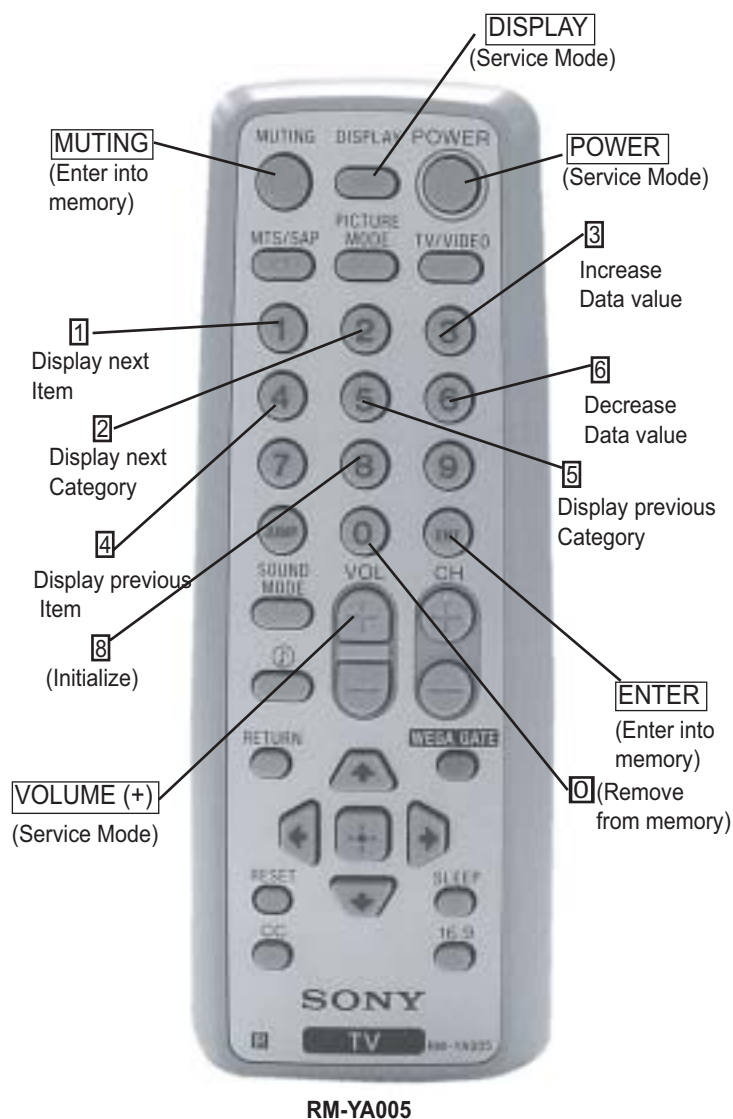
SECTION 3: CIRCUIT ADJUSTMENTS

Electrical Adjustments by Remote Commander

Use the Remote Commander (RM-YA005) to perform the circuit adjustments in this section.

Test Equipment Required: 1. Pattern generator 2. Frequency counter 3. Digital multimeter 4. Audio oscillator

3-1. REMOTE ADJUSTMENT BUTTONS AND INDICATORS



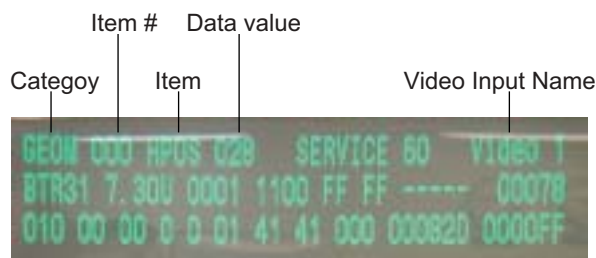
3-2. ACCESSING THE SERVICE MENU

Use the remote commander to access the service menu and perform the following adjustments.

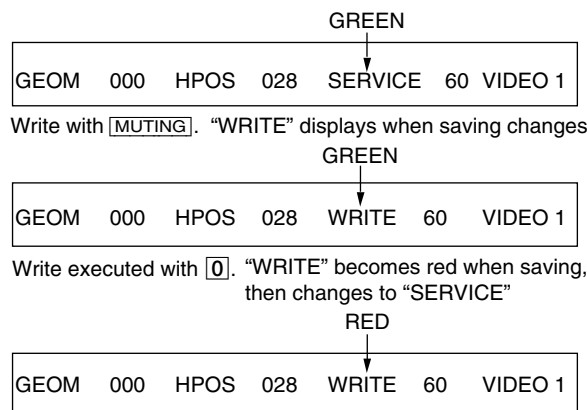
1. Standby mode (Power off).
2. Press the following buttons on the remote commander within a second of each other:

DISPLAY → Channel **5** → Sound Volume **+** → **POWER**

The screen displays the first service data category item.



1. On the Remote Commander press **2** to select the next category, or **5** to select the previous category.
2. Press **1** to select the next item, or **4** to select the previous item.
3. Press **3** to increase the data value, or **6** to decrease the data value.
4. Press **MUTING** then **0** to write into memory.



Resetting the User Menus

Use the following procedure to reset the User Menus to the factory default settings.

1. Access Service Menu.
2. Press **8** then **0** on the Remote Commander.

3-3. CONFIRMING SERVICE ADJUSTMENT CHANGES

1. After completing adjustments, pull out the plug from the AC outlet, then replace the plug in the AC outlet again.
2. Access Service Menu.
3. Using the buttons on the Remote Commander, locate the adjusted items again to confirm they were adjusted.

3-4. WHITE BALANCE ADJUSTMENTS

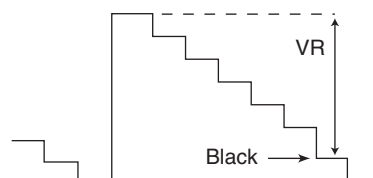
NOTE: FOCUS adjustment should be completed before White Balance adjustment. (See 2-3. FOCUS ADJUSTMENT)

1. Access Service Menu.
2. Input white raster signal using signal generator.
3. Set the following condition:
Picture "STANDARD", PICT 006, note value of "WTS" then change to 00.
4. Press **2** or **5** to select the WHBL category.
5. Press **1** or **4** to display the 03 "GDRV" and 04 "BDRV" items.
6. Press **3** or **6** to adjust for the best white balance.
7. At Cutoff, select WHBL 000 "BKOR" and 001 "BKOG" and adjust the data.
8. Perform adjustment at Highlight and Cutoff condition until it reaches its target.
9. Press **MUTING** then **ENTER** to save into the memory.
10. Set PICT 006 "WTS" back to its original data.

3-5. PICTURE QUALITY ADJUSTMENTS

P Max/Contrast Adjustment

1. Set TV to Video mode.
2. Set Picture mode to "CUSTOM".
3. Input PAL 100% Color Bar (CB) to TV set (OTHER model)
NTSC 75% Color Bar (CB) (NTSC model).
4. Set the following condition:
PICTURE 100%, COLOR 0%, BRIGHTNESS 50%
5. Connect an oscilloscope to pin ④ (R Output) of CN004.
6. Access the Service Menu. Set PICT 003 "PWL" to 00h and WHBL 017 "BLBG" to 01h.
7. Press **1** or **4** to display SAdj 000 "PMAX", then adjust VR by pressing **3** or **6** until the spec below is displayed:



	PAL	NTSC
VR	2.15± 0.03Vpp	1.61± 0.03Vpp

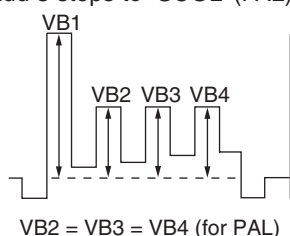
8. Copy the adjusted PMAX data to TV mode.

9. Select Wide Mode to "ON" in TV and Video mode and write "PMAx" data - 6 steps (for models with V-Compression features only).
10. Press **MUTING** then **0** to write into memory.
11. Set "PWL" and "BLBG" back to initial data.
("PWL": 01h and "BLBG": 00h)
12. Press **MUTING** then **0** to write into memory.

Sub Color Adjustment

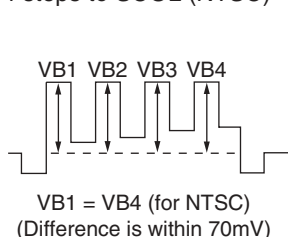
1. Set TV to Video mode.
2. Set Picture mode to "CUSTOM".
3. Input PAL 100% Color Bar (CB) to TV.
4. Set the following condition:
PICTURE 100%, COLOR 50%, BRIGHTNESS 50%, HUE 50%, SHARPNESS 50%
5. Set PICT 006 "WTS" to 00h.
6. Connect an oscilloscope to pin ② (B Output) of CN004 on A Board.
7. Access service mode, then press **1** or **4** to select SADJ 004 "SCOL", then adjust VB2=VB3=VB4 (for PAL) by pressing **3** or **6**, then write in the data as shown below:

Add 3 steps to "SCOL" (PAL) – 29"



8. Copy "SCOL" 50 (PAL) video data to "SCOL" 50 (SECAM) video.
9. Copy "SCOL" 50 (PAL) video data and "SCOL" 50 (SECAM) video data to "SCOL" 50 (PAL) and "SCOL" 50 (SECAM) TV table.
10. For NTSC model, input NTSC 75% Color Bar (CB) to TV and repeat steps 4-6.
11. Access service mode, then press **1** or **4** to select SADJ 004 "SCOL", then adjust VB1 = VB4 (for NTSC) by pressing **3** or **6**, then write in the data as shown below:

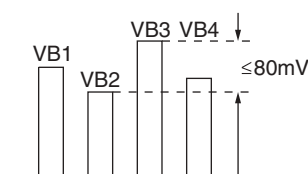
Add 4 steps to SCOL (NTSC) – 29"



12. Copy "SCOL" 60 (NTSC) video data to "SCOL" 60 (NTSC) TV.
13. Copy "SCOL" 50 (PAL) and "SCOL" 60 (NTSC) data to "SCOL" 50 (PAL) and "SCOL" 60 (NTSC) in DVD mode.
14. Press **MUTING** then **0** to write into memory.
15. Set PICT 006 "WTS" back to original data.

Sub Hue Adjustment

1. Set TV to Video mode.
2. Input NTSC 3.58 Color Bar (CB) to TV set.
3. Set the following condition:
PICTURE 100%, COLOR 50%, BRIGHTNESS 50%, HUE 50%, SHARPNESS 50%
4. Connect oscilloscope to pin ② (B output) of CN004.
5. Access service menu, then press **1** or **4** to select SADJ 001 "SHUE" and YC 013 "TINT", then adjust VB1= VB2 = VB3 = VB4 by pressing **3** or **6**.
6. Press **MUTING** then **0** to write into memory.
7. Select TV channel with NTSC 3.58 and repeat steps 3-7.
8. For single system model with NTSC 4.43, select TV channel with NTSC 4.43 and repeat steps 3-7.
9. Once adjustment is completed in Video mode, repeat the adjustment in DVD mode. Set TV to DVD mode. Input NTSC 3.58 Color Bar (CB).
10. Connect oscilloscope to pin ② (B output) of CN004.
11. Access service menu, then press **1** or **4** to select YC 013 "TINT", then adjust VB1= VB2 = VB3 = VB4 by pressing **3** or **6**.
12. Press **MUTING** then **0** to write into memory.



The highest level of VB1, VB2, VB3 and VB4 should be aligned at the same line.

The ideal difference between VB2 and VB3 is within $\pm 80\text{mV}$.

Sub Bright Adjustment

1. Set TV to RF mode.
2. Input PAL monoscope to RF mode (OTHER model) and NTSC monoscope (NTSC model).
3. In CUSTOM mode, set BRIGHTNESS 50% and PICTURE to "MINIMUM"
4. Access the service menu and press **1** or **4** to select WHBL 010 "SBRT", then press **3** to increase the data value, or **6** to decrease the data value so that the cut-off level is 10 IRE, slightly glimmer: 20 IRE + 2 steps.
5. Press **MUTING** then **0** to write into memory.
6. Copy the adjusted data WHBL 010 "SBRT" to Video mode.
7. Once adjustment is completed in RF and Video mode, repeat the adjustment in DVD mode. Repeat steps 2 and 3.
8. Access the service menu and press **1** or **4** to select WHBL 010 "SBRT", then press **3** to increase the data value, or **6** to decrease the data value so that the cut-off level is 10 IRE, slightly glimmer: 20 IRE.

Geometry Adjustment

Geometry adjustment must be done for both color systems PAL and NTSC.

H-Trapezoid Adjustment

1. Receive cross hatch/dot signal.
2. Adjust RV 1800 on CV Board to make H-Trapezoid distortion best/to obtain the center illustration shown in TABLE 1.



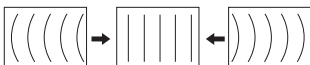

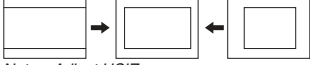



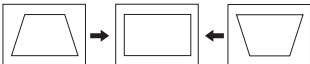

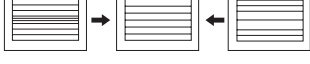
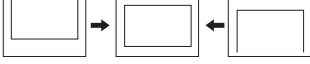
Category	Function	Illustration
GEOM 000 (HPOS)	H Position	
GEOM 001 (HPAR)	H Parallelogram	
GEOM 002 (HBOW)	H Bow	
GEOM 003 (VLIN)	Linearity	
GEOM 005 (HSIZ)	EW Width	 <i>Note: Adjust HSIZ</i> $16.6 + \text{-(SPCB)} - 50\text{Hz}$ $14.8 + \text{-(PAL Monoscope)} - 50\text{Hz}$ $15.3 + \text{-(NTSC Monoscope)} - 60\text{Hz}$
GEOM 006 (EWPW)	EW Parabola/Width	
GEOM 007 (UCOP)	EW Upper Corner Parabola	
GEOM 008 (LCOP)	EW Lower Corner Parabola	
GEOM 009 (EWTZ)	EW Trapezoid	
GEOM 011 (VSIZ)	V-Amplitude	 <i>Note: Adjust VSIZ</i> $12.6 + \text{-(SPCB)} - 50\text{Hz}$ $11.3 + \text{-(PAL Monoscope)} - 50\text{Hz}$ $11.7 + \text{-(NTSC Monoscope)} - 60\text{Hz}$
GEOM 012 (SCOR)	S-Correction	
GEOM 013 (VPOS)	V-Shift	

TABLE 1

Normal Mode 50Hz/60Hz

1. Input PAL Special Color Bar (SPCB) or PAL Monoscope (OTHER model) and Video mode or NTSC Monoscope (NTSC model) signal using a pattern generator.
2. Set Wide Mode to "OFF".
3. Use TABLE 1 to complete the adjustments by accessing service mode and then selecting the category item that needs adjusting by pressing **1** or **4**.
4. Press **3** to increase the data value, or **6** to decrease the data value.
5. Press **MUTING** then **0** to write into memory.

Wide Mode

1. Input PAL Special Color Bar (SPCB) or PAL Monoscope (OTHER model) and Video mode or NTSC Monoscope (NTSC model) signal using a pattern generator.
2. Set Wide Mode to "ON".
3. Copy NORMAL MODE 50Hz/60Hz adjusted data for the following items:
GEOM: 011 VSIZ, 010 VSLP, 012 SCOR, and 003 VLIN
4. Use TABLE 1 to adjust the data by pressing **3** to increase the data value, or **6** to decrease the data value until the screen displays the center illustration for all items except the following:
GEOM: 003 VLIN, 010 VSLP, 011 VSIZ, and 012 SCOR
5. Press **MUTING** then **0** to write into memory.

3-6. SERVICE DATA

TVJ	Functionality		No.	Function	Initial Value			
Category	No.	Name	Dec		(4:3) 50	(4:3) 60	(4:3) w50	(4:3) w60
GEOM	000	HPOS	0	Horizontal Shift (HS)	26	36	30	37
	001	HPAR	1	Horizontal Parallelogram	43	44	42	45
	002	HBOW	2	Horizontal Bow	30	24	26	28
	003	VLIN	3	Vertical Linearity	39	39	39	39
	004	VSCR	4	Vertical Scroll	31	31	31	31
	005	HSIZ	5	EW Width (EW)	42	41	46	47
	006	EWPW	6	EW Parabola/Width (PW)	45	47	49	35
	007	UCOP	7	EW Upper Corner Parabola	40	38	39	57
	008	LCOP	8	EW Lower Corner Parabola	45	47	58	15
	009	EWTZ	9	EW Trapezium	27	17	18	31
	010	VSLP	10	Vertical Slope (VS)	31	31	31	31
	011	VSIZ	11	Vertical Amplitude	21	21	18	19
	012	SCOR	12	S-Correction (SC)	37	37	37	37
	013	VPOS	13	Vertical Shift (VSH)	48	49	40	44
	014	HBL	14	RGB Blanking Mode	01	01	01	01
	015	WBF	15	Timing of Wide Blanking (WBF)	10	03	10	03
	016	WBR	16	Timing of Wide Blanking (WBR)	11	11	11	11
	017	SBL	17	Service Blanking				
	018	COPY	18	Copy the GEO data to all 50/60Hz NVM area				

TVJ	Functionality		No.	Function	Initial Value					
Category	No.	Name	Dec		Col Temp	Col Temp	Col Temp	Col Temp	Col Temp	Col Temp
WHBL	000	BKOR	0	Black Level Offset R (OFB = 00), Offset B (OFB = 01)	31	31	31	31	31	31
	001	BKOG	1	Black Level Offset G	20	20	20	20	20	20
	002	RDRV	2	White Point R	37	37	37	37	37	37
	003	GDRV	3	White Point G	45	42	37	45	42	37
	004	BDRV	4	White Point B	56	19	36	56	19	36
	005	LPG	5	RGB Gain Preset						
	006	PGR	6	Preset Gain R (PGR)						
	007	PGG	7	Preset Gain G (PGG)						
	008	PGB	8	Preset Gain B (PGB)						
	009	GNOF	9	Preset Gain Offset						
	010	SBRT	10	Sub-Brightness						
	011	SBRO	11	Sub-Brightness Offset (Intelligent Pic)						
	012	CBS	12	Control Sequence of Beam Current Limiting						
	013	RGBB	13	RGB Blanking						
	014	BLBG	14	Blanking of Blue & Green Output						
	015	OFB	15	Black Level Offset Blue						
	016	WBP	16	Color Temp setting (0:High , 1:Normal , 2,3: Low)						

TVJ	Functionality		No.	Function	Initial Value							
Category	No.	Name	Dec		YUV	50pal(TV)	50pal(Video)	Pic mode 0	Pic mode 1	Pic Mode 2	TV	Video
WHBL	000	BKOR	0	Black Level Offset R (OFB = 00), Offset B (OFB = 01)								
	001	BKOG	1	Black Level Offset G								
	002	RDRV	2	White Point R								
	003	GDRV	3	White Point G								
	004	BDRV	4	White Point B								
	005	LPG	5	RGB Gain Preset								
	006	PGR	6	Preset Gain R (PGR)								
	007	PGG	7	Preset Gain G (PGG)								
	008	PGB	8	Preset Gain B (PGB)								
	009	GNOF	9	Preset Gain Offset								
	010	SBRT	10	Sub-Brightness	36	35	34				35	34
	011	SBRO	11	Sub-Brightness Offset (Intelligent Pic)								
	012	CBS	12	Control Sequence of Beam Current Limiting								
	013	RGBB	13	RGB Blanking								
	014	BLBG	14	Blanking of Blue & Green Output								
	015	OFB	15	Black Level Offset Blue								
	016	WBP	16	Color Temp setting (0:High , 1:Normal , 2,3: Low)				00	01	02		

TVJ	Functionality		No.	Function	Initial Value					
Category	No.	Name	Dec		Common	YUV	50pal(TV)	50pal(Video)	50secam (TV)	50secam (Video)
SADJ	000	PMAX	0	Picture Maximum						
	001	SHUE	1	Sub-Hue						
	002	SSHP	2	Sub-Sharpness		35				
	003	SSHO	3	Sub-Sharpness Offset (Intelligent Pic)	04					
	004	SCOL	4	Sub-Color			35	37	29	31
	005	SCOO	5	Sub-Color Offset (Intelligent Pic)	01					
	006	PIC	6	Picture Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]						
	007	COL	7	Color Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]						
	008	BRT	8	Brightness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]						
	009	HUE	9	Hue Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)] (* send to TINT #1Eh(5-0) with US model)						
	010	SHP	10	Sharpness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]						

TVJ	Functionality		No.	Function	Initial Value					
Category	No.	Name	Dec		60ntsc(TV)	60ntsc(Video)	60palm(TV)	60palm(Video)	50YUV	60YUV
SADJ	000	PMAX	0	Picture Maximum						
	001	SHUE	1	Sub-Hue						
	002	SSHP	2	Sub-Sharpness						
	003	SSHO	3	Sub-Sharpness Offset (Intelligent Pic)						
	004	SCOL	4	Sub-Color	33	31	31	31	41	34
	005	SCOO	5	Sub-Color Offset (Intelligent Pic)						
	006	PIC	6	Picture Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]						
	007	COL	7	Color Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]						
	008	BRT	8	Brightness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]						
	009	HUE	9	Hue Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)] (* send to TINT #1Eh(5-0) with US model)						
	010	SHP	10	Sharpness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]						

TVJ	Functionality		No.	Function	Initial Value								
Category	No.	Name	Dec		50RGB	60RGB	Pic mode 0	Pic mode 1	Pic Mode 2	TV	Video	TV Wide (4:3)	Video Wide (4:3)
SADJ	000	PMAX	0	Picture Maximum						48	48	42	42
	001	SHUE	1	Sub-Hue						06	11		
	002	SSHP	2	Sub-Sharpness						35	37		
	003	SSHO	3	Sub-Sharpness Offset (Intelligent Pic)									
	004	SCOL	4	Sub-Color									
	005	SCOO	5	Sub-Color Offset (Intelligent Pic)									
	006	PIC	6	Picture Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]			100	90	80				
	007	COL	7	Color Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]			57	50	50				
	008	BRT	8	Brightness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]			48	50	50				
	009	HUE	9	Hue Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)] (* send to TINT #1Eh(5-0) with US model)			50	50	50				
	010	SHP	10	Sharpness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]			58	50	50				

TVJ	Functionality		No.	Function	Initial Value						
Category	No.	Name	Dec		Common	Others	YUV	PAL(TV)	NTSC(TV)	SECAM(TV)	PAL(Video)
YC	000	PFRQ	0	Peaking Center Frequency and Delay		00					
	001	RPA	1	Ratio Pre & Over Shoot		0					
	002	RPO	2	Ratio of Positive & Negative Peaks		02					
	003	YDLY	3	Y-Delay			10	10	06	06	11
	004	CMAT	4	PAL-SECAM or NTSC (Japan/USA) Matrix	01						
	005	ACL	5	Automatic Color Limiting	01						
	006	CB	6	Chroma Bandpass Center Frequency	00						
	007	SBO	7	SECAM Black Offset	01						
	008	CHSE	8	PAL/NTSC Ident Sensitivity	02						
	009	CLO	9	Center Frequency of Cloche(Bell) Filter	00						
	010	CTRP	10	Chroma Trap Mode		00					
	011	QDT	11	Second Chroma Trap		00					
	012	BPS	12	Bypass of Chroma Base-band Delay Line		00					
	013	TINT	13	Base-Band Tint Control		32	32				
	014	TUV	14	Tint Control on UV Signals	00						
	015	BWYC	15	Bandwidth at YC mode for 3.58 MHz color system (BWYC)	00						
	016	OSB	16	Width of internal burstkey pulse of chroma demodulator (OSB)	00						
	003	BKC	3	Burst Key Position		00	01	00			

TVJ	Functionality		No.	Function	Initial Value					
Category	No.	Name	Dec		NTSC(Video)	SECAM(Video)	S-INPUT	SECAM	NTSC	TV
YC	000	PFRQ	0	Peaking Center Frequency and Delay						00
	001	RPA	1	Ratio Pre & Over Shoot						01
	002	RPO	2	Ratio of Positive & Negative Peaks						03
	003	YDLY	3	Y-Delay	09	06	-			
	004	CMAT	4	PAL-SECAM or NTSC (Japan/USA) Matrix						
	005	ACL	5	Automatic Color Limiting						
	006	CB	6	Chroma Bandpass Center Frequency						
	007	SBO	7	SECAM Black Offset						
	008	CHSE	8	PAL/NTSC Ident Sensitivity						
	009	CLO	9	Center Frequency of Cloche(Bell) Filter						
	010	CTRP	10	Chroma Trap Mode				01		
	011	QDT	11	Second Chroma Trap				00		
	012	BPS	12	Bypass of Chroma Base-band Delay Line					01	
	013	TINT	13	Base-Band Tint Control						32
	014	TUV	14	Tint Control on UV Signals						
	015	BWYC	15	Bandwidth at YC mode for 3.58 MHz color system (BWYC)	00					
	016	OSB	16	Width of internal burstkey pulse of chroma demodulator (OSB)	00					
	003	BKC	3	Burst Key Position		00	01	00		

TVJ	Functionality		No.	Function	Initial Value						
Category	No.	Name	Dec		Common	(4:3) 50	(4:3) 60	Others	YUV	TV	Video
SYNC	000	SYS	0	Synchronization on YSYNC Input	00						
	001	FO	1	Phase 1 Time Constant						03	03
	002	VID	2	Video Ident Mode		00	00				
	003	FSL	3	Forced Slicing Level for Vertical Sync	00						
	004	SSL	4	Slicing Level Sync Separator		00	00				
	005	SVID	5	Source Selection for Video Identification				00	00		
	006	FORF	6	Forced Field Frequency	01						
	007	MVK	7	Macro Vision Keying	01						

TVJ	Functionality		No.	Function	Initial Value		
Category	No.	Name	Dec		Teletext	TV-ip	No Signal
SYNC	000	SYS	0	Synchronization on YSYNC Input			
	001	FO	1	Phase 1 Time Constant	01	00	00
	002	VID	2	Video Ident Mode			
	003	FSL	3	Forced Slicing Level for Vertical Sync			
	004	SSL	4	Slicing Level Sync Separator			
	005	SVID	5	Source Selection for Video Identification			
	006	FORF	6	Forced Field Frequency			
	007	MVK	7	Macro Vision Keying			

TVJ	Functionality		No.	Function	Initial Value						
Category	No.	Name	Dec		Common	Others	Live	TV(Dyn)	TV(Others)	Video(Dyn)	Video(Others)
PICT	000	CADL	0	Cathode Drive Level	05						
	001	CFA	1	Comb Filter Mode	00						
	002	SOC	2	Soft Clipping Level	02						
	003	PWL	3	Peak White Limiting Switch	01						
	004	WHTL	4	Peak White Limiting	05						
	005	GAM	5	Gamma	01						
	006	WTS	6	Gamma Control and White Stretch		01	01				
	007	TFR	7	DC Transfer Ratio of Luminance Signal		01	01				
	008	COR	8	Coring				01	02	00	01
	009	CORO	9	Coring Offset (Intelligent Pic)	01						
	010	BKS	10	Black Stretch		02					
	011	AAS	11	Black Area to Switch off the Black Stretch	01						

TVJ	Functionality		No.	Function	Initial Value			
Category	No.	Name	Dec		Color Temp (HIGH)	Color Temp (Others)	Color Temp (LOW)	Color Temp (NORMAL)
PICT	000	CADL	0	Cathode Drive Level				
	001	CFA	1	Comb Filter Mode				
	002	SOC	2	Soft Clipping Level				
	003	PWL	3	Peak White Limiting Switch				
	004	WHTL	4	Peak White Limiting				
	005	GAM	5	Gamma				
	006	WTS	6	Gamma Control and White Stretch				
	007	TFR	7	DC Transfer Ratio of Luminance Signal				
	008	COR	8	Coring				
	009	CORO	9	Coring Offset (Intelligent Pic)				
	010	BKS	10	Black Stretch				
	011	AAS	11	Black Area to Switch off the Black Stretch				

TVJ	Functionality		No.	Function	Initial Value			
Category	No.	Name	Dec		Common	YUV	TV	Video
SW	001	SVO	1	Function of IFVO/SVO/CVBSI Pin @ 48		03	01	01

TVJ	Functionality		No.	Function	Initial Value
Category	No.	Name	Dec		Common
VIF	000	OIFD	0	Offset IF Demodulator	36
	001	AGCT	1	AGC Take-over	18
	002	STM	2	Search Tuning Mode	01
	003	GD	3	Group Delay on CVBS1 Signal	00
	004	AGCS	4	IF AGC Speed	01
	005	FFI	5	Fast Filter IF PLL	00
	006	LNAI	6	RF Amp LNA bit initial value	00
	007	LNAT	7	RF Amp Threshold Level	195
	008	LNSN	8	RF Amp SN Level Threshold	03
	009	LNSD	9	RF Amp SN Level Drop Threshold	01
	010	LNEX	10	RF Amp check SN Drop Timing	30
	011	CHTR	11	Channel Threshold after Auto Prg to set RF Amp User Mode	25
	012	TUSO	12	Sony Tuner used	00

TVJ	Functionality		No.	Function	Initial Value						
Category	No.	Name	Dec		Common	Others	Pic mode 0	Pic mode 1	Pic Mode 2	SECAM	TV
VM	000	RGBD	0	Delay of RGB Output to VM Output	03						
	001	VMA	1	Amplitude of VM Output	03						
	002	VMAP	2	VM setting (0:High , 1:Low , 2,3: OFF)			00	00	00		
	003	VMMO	3	VM Mode	03						
	004	CRAO	4	Coring on SVM		00					00

TVJ	Functionality		No.	Function	Initial Value
Category	No.	Name	Dec		Common
SDEM	000	FMWS	0	Window Selection for FM Demodulator	02
	001	QSS	1	Quasi Split Sound (QSS) Amplifier Mode(N/A for GA multi M system)	01
	002	BPB	2	Bypass of Sound Bandpass Filter	00
	003	HPVC	3	Head Phone Volume Control	00
	004	CMCA	4	Activate Mono Channel	00
	005	BPBS	5	Bypass of sound bandpass filter at stereo mode (BPBS)	01

TVJ	Functionality		No.	Function	Initial Value
Category	No.	Name	Dec		Common
TXT	000	TXV	0	Teletext Vertical Position for Philips	00
	001	THD	1	Teletext H-sync Active Edge Shift	00
	002	TBR	2	Teletext RGB Brightness	00
	003	ACQ	3	Teletext Acquisition (Auto-0, PAL-1)	00
	004	TBRM	4	Teletext Mix Mode Brightness	00

TVJ	Functionality		No.	Function	Initial Value							
Category	No.	Name	Dec		Common	TV	Video	Off	SRS/WOW	Trusurround	Istereo	Imono
SDSP	000	BBL	0	BBE Contour	00				07	07	07	07
	001	BBH	1	BBE Process	00				07	07	07	07
	002	BBLW	2	BBE Contour Offset	04							
	003	SVOF	3	Surround /Effect Mode Volume Offset				06	11	06	08	06
	004	LAD	4	Decoder Level Adjust	05							
	005	LAM	5	Mono Level Adjust	05							
	006	LAN	6	Nicam Level Adjust	22							
	007	LAS	7	SAP Level Adjust	08							
	008	LAA	8	ADC Level Adjust		00	00					
	009	SEF	9	Incredible Mono/Stereo Effect							05	03
	010	BAS	10	Main Bass Offset					23	23	23	23
	011	TRE	11	Main Treble Offset					29	29	29	29
	012	EQ1	12	Equalizer Main Channel Band (100 Hz) Offset					00	00	00	00
	013	EQ2	13	Equalizer Main Channel Band (300 Hz) Offset					15	15	15	15
	014	EQ3	14	Equalizer Main Channel Band (1000 Hz) Offset					01	01	01	01
	015	EQ4	15	Equalizer Main Channel Band (3000 Hz) Offset					15	15	15	15
	016	EQ5	16	Equalizer Main Channel Band (8000 Hz) Offset					03	03	03	03
	017	BFCT	17	DBE, DUB and BBE Control	00							
	018	SCEN	18	SRS3D Center Control	04							
	019	SSPA	19	SRS3D Space Control	01							
	020	BBHW	20	BBE process offset in WOW mode	00							
	021	STRE	21	Treble Offset for surround mode	01							
	022	BBHT	22	BBE Offset in TV mode	00							
	023	TTRE	23	Treble Offset in TV Mode	03							
	024	VBAS	24	Bass Offset depend on user volume	01							
	025	VTRE	25	Treble Offset depend on user volume	01							
	028	TBAS	28	Bass Offset for TV	00							
	027	BBLO	27	Bass Offset for TV	00							
	028	BBHO	28	Bass Offset for TV	00							

TVJ	Functionality		No.	Function	Initial Value
Category	No.	Name	Dec		Common
SDEC	000	SPTU	0	Upper Threshold for SAP carrier detection	09
	001	SPTL	1	Lower Threshold for SAP carrier detection	15
	002	SPTH	2	Noise Threshold for automute of SAP	09
	003	SPHY	3	Hysteresis size for automute of SAP	03
	004	FMTH	4	Noise Threshold for automute of SC2 in FM A2 standard	18
	005	FMHY	5	Hysteresis size for automute of SC2 in FM A2 standard	07
	006	NILE	6	NICAM lower error limit (DDEP)	50
	007	NIUE	7	NICAM upper error limit (DDEP)	200
	008	EPMD	8	DEMDEC Easy Programming (DDEP)	01
	009	STDS	9	Bits multiplexed for ASD and SSS modes	13
	010	OVMA	10	FM overmodulation adaption	00
	011	FLBW	11	FM/AM demodulator filter bandwidth	01
	012	IDMD	12	FM ident speed in SSS mode	00
	013	OVMT	13	Overmodulation level threshold relative to nominal	03
	014	DCXI	14	NICAM DCXO Scaling Control Inverter	00
	015	DCXG	15	NICAM DCXO Scaling Control Gain	00
	016	DCLL	16	NICAM DCXO Scaling Control Limit (L)	00
	017	DCLH	17	NICAM DCXO Scaling Control Limit (H)	00

TVJ	Functionality		No.	Function	Initial Value				
Category	No.	Name	Dec		Common	(4:3) 50	(4:3) 60	Others	YUV
OPTM	000	ASHT	0	auto shut off timer (data * 5 min)	06				
	001	OSDB	1	OSD brightness	16				
	002	OSDH	2	OSD Horizontal Position	08				
	003	OSDV	3	OSD Vertical Position		61	39		
	004	MUTE	4	No Signal Mute Switch (1 = enabled)	01				
	005	RFUL	5	RF Signal Change Counter after Unlocked (Disable when 0fh)	01				
	006	RFLK	6	RF Signal Change Counter after Locked (Disable when 0fh)	04				
	007	LANG	7	OSD language shipping condition	01				
	008	HTXT	8	sync separator sw				00	01
	009	CMSS	9	Sync sw	1				
	010	DCXO	10	DCXO Value	47				
	011	DISC	11	target DISCO data for DCXO adjust by color dec	128				
	012	EXBL	12	Extended Blanking Timer to Eliminate White Noise.	04				
	013	TSYS	13	Memorize TV Sys in NVM at Test Reset [0:B/G, 1:I, 2:D/K, 3:M] (GA Mode)	03				
	014	LNSW	14	Signal Booster Shipping/Test Reset condition (1: Auto, 0:Off)	00				
	015	LBL	15	Brightness Reduction At No Signal condition	00				
	016	HPRO	16	Hpara Offset for Picture Rotation	03				
	017	AVUL	17	AV Signal Change Counter after Unlocked (Disable when 0Fh)	04				
	018	AVLK	18	AV Signal Change Counter after Locked (Disable when 0Fh)	00				
	019	CSPM	19						
	020	SENH	20	Sound Enhancer Crackling sound c/m (0:Off, 1:On)	01				
	021	SPSC	21	SPEED search (0: disable, 1:4times, 2:6times, 3:8times)					
	022	MULO	22	Audio Mute Port Logic Selection (0:Active High, 1:Active Low)	01				

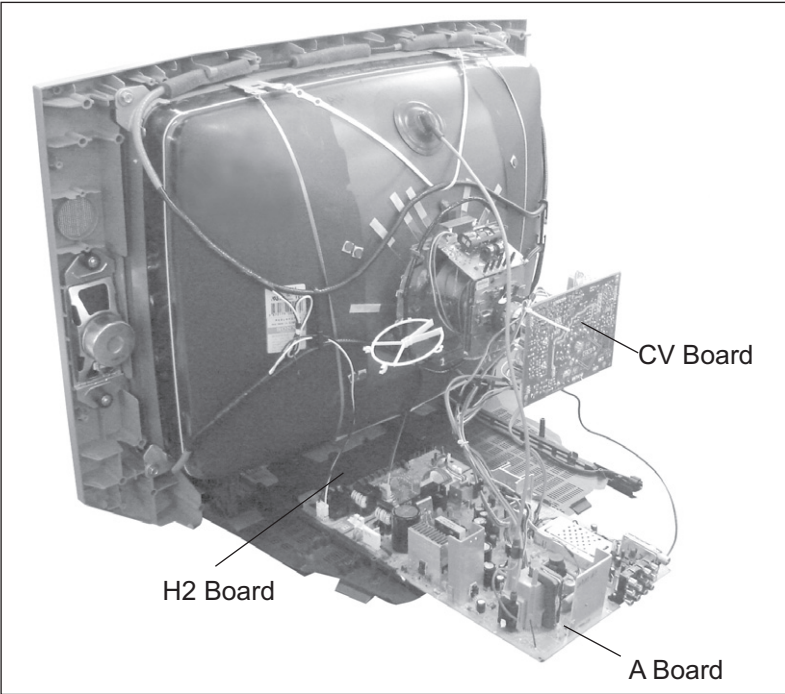
TVJ	Functionality		No.	Function	Initial Value		
Category	No.	Name	Dec		Common	Others	YUV
OPUS	000	SOFF	0	stay off (0: follow last memory with AC on, 1: standby with AC on)	01		
	001	SPCH	1	Channel Number after Shipping Condition	6		
	002	SPCA	2	Cable Selection after Shipping Condition (1 = Cable On)	01		
	003	CCBR	3	CC Brightness (only for US)			
	004	CCHP	4	CC H position (only for US)			
	005	OUV	5	Offset Control on UV Input Signals (only for NTSC model)		00	00
	006	CFA2	6	Forced Comb Filter On (only for NTSC model)	00		
	007	HSYC	7	H Sync Selection for Tuning (SL, LOCK or SID) only for US			

TVJ	Functionality		No.	Function	Initial Value	
Category	No.	Name	Dec		Common	
OPFM	000	FMCT	0	FM Radio Auto Scan Carrier Threshold	20	
	001	RPST	1	Waiting time for each frequency step during radio preset	10	
	002	MPTU	2	Upper Threshold for MPX pilot detection (FM_RADIO)	12	
	003	DCOU	3	Upper threshold for DC offset from FM demodulator	142	
	004	DCOL	4	Lower threshold for DC offset from FM demodulator	116	
	005	OVMA	5	FM overmodulation adaption (FM_RADIO)	00	
	006	FMBR	6	OSD Brightness during FM Mode	11	
	007	RTRE	7	Treble Offset in FM Radio Mode	02	
	008	RBAS	8	Bass Offset in FM Radio Mode	02	
	009	AGCT	9	ACG takeover in FM Radio Mode	VIF 01 AGCT [A7F] + 2	
	010	FLBW	10	FM/AM demodulator filter bandwidth	01	
	011	STDS	11	Selectable IF 0:STDSEL(17) 50us deemphasis 1: STDSEL(18) 75us deemphasis (US/NTSC only)	01	

TVJ	Functionality		No.	Function	Initial Value
Category	No.	Name	Dec		Common
OPTB	000	IALL	0	Standard Write Switch (not memorized in NVM)	
	001	OPB1	1	Option 1 (System related)	8
	002	OPB2	2	Option 2 (Video Signal related)	105
	003	OPB3	3	Option 3 (Stereo Decoding related)	4
	004	OPB4	4	Option 4 (Miscellaneous)	32
	005	OPB5	5	Option 5 (Miscellaneous)	11
	006	OPB6	6	Option 6 (OSD Language related)	1

SECTION 4: DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION



4-2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM INFORMATION

All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.

All electrolytics are in 50V unless otherwise specified.

All resistors are in ohms. k=1000, M=1000k

Indication of resistance, which does not have one for rating electrical power, is as follows: Pitch : 5mm Rating electrical power :

$\frac{1}{4}$ W in resistance, $\frac{1}{10}$ W and $\frac{1}{8}$ W in chip resistance.

: nonflammable resistor.

: fusible resistor.

Δ : internal component.

: panel designation and adjustment for repair.

\perp : earth ground

: earth-chassis

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

Readings are taken with a color-bar signal input.

Readings are taken with a 10M digital multimeter.

Voltages are DC with respect to ground unless otherwise noted.

Voltage variations may be noted due to normal production tolerances.

All voltages are in V.

S : Measurement impossibility.

: B-line.

(Actual measured value may be different).

: signal path. (RF)

Circled numbers are waveform references.

The components identified by shading and Δ symbol are critical for safety. Replace only with part number specified.

The symbol indicates a fast operating fuse and is displayed on the component side of the board. Replace only with fuse of the same rating as marked.

REFERENCE INFORMATION

RESISTOR

: RN METAL FILM
: RC SOLID
: FPRD NONFLAMMABLE CARBON
: FUSE NONFLAMMABLE FUSIBLE
: RW NONFLAMMABLE WIREWOUND
: RS NONFLAMMABLE METAL OXIDE
: RB NONFLAMMABLE CEMENT
: \otimes ADJUSTMENT RESISTOR

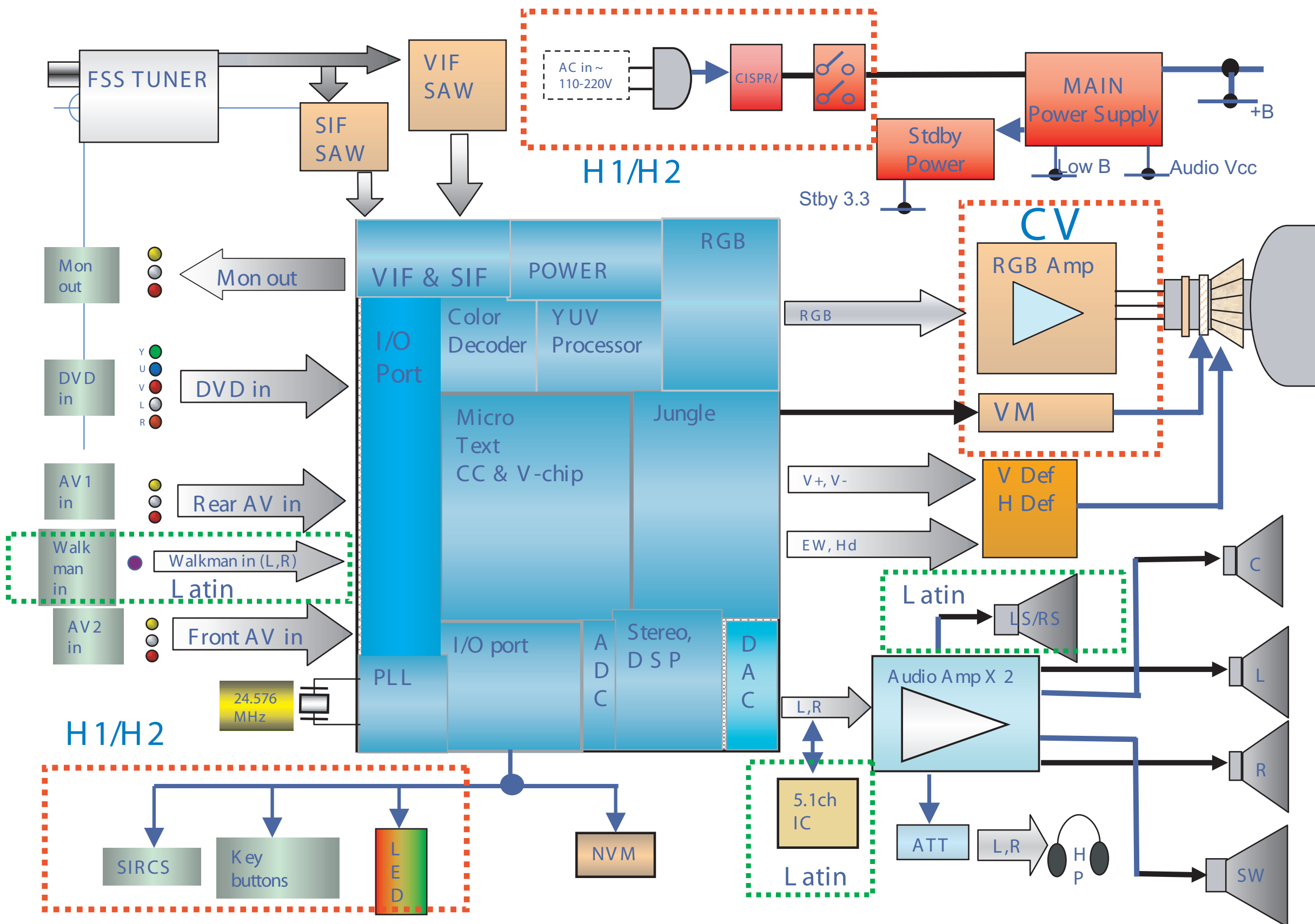
CAPACITOR

: TA TANTALUM
: PS STYROL
: PP POLYPROPYLENE
: PT MYLAR
: MPS METALIZED POLYESTER
: MPP METALIZED POLYPROPYLENE
: ALB BIPOLAR
: ALT HIGH TEMPERATURE
: ALR HIGH RIPPLE

COIL

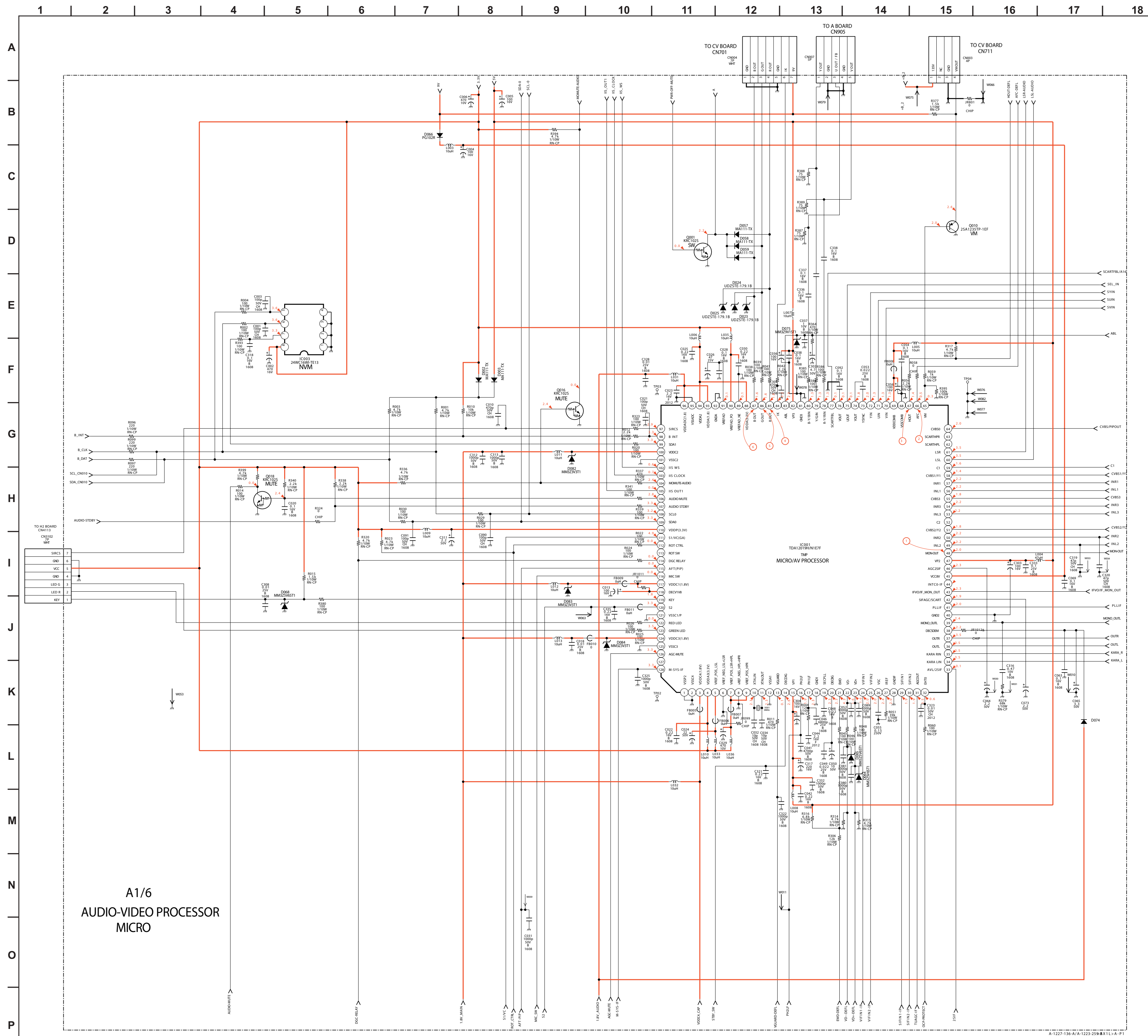
: LF-8L MICRO INDUCTOR

4-3. BLOCK DIAGRAM

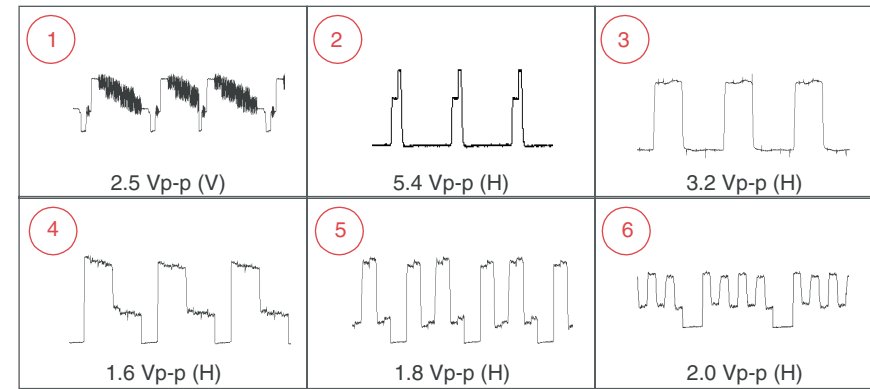


4-4. SCHEMATICS AND SUPPORTING INFORMATION

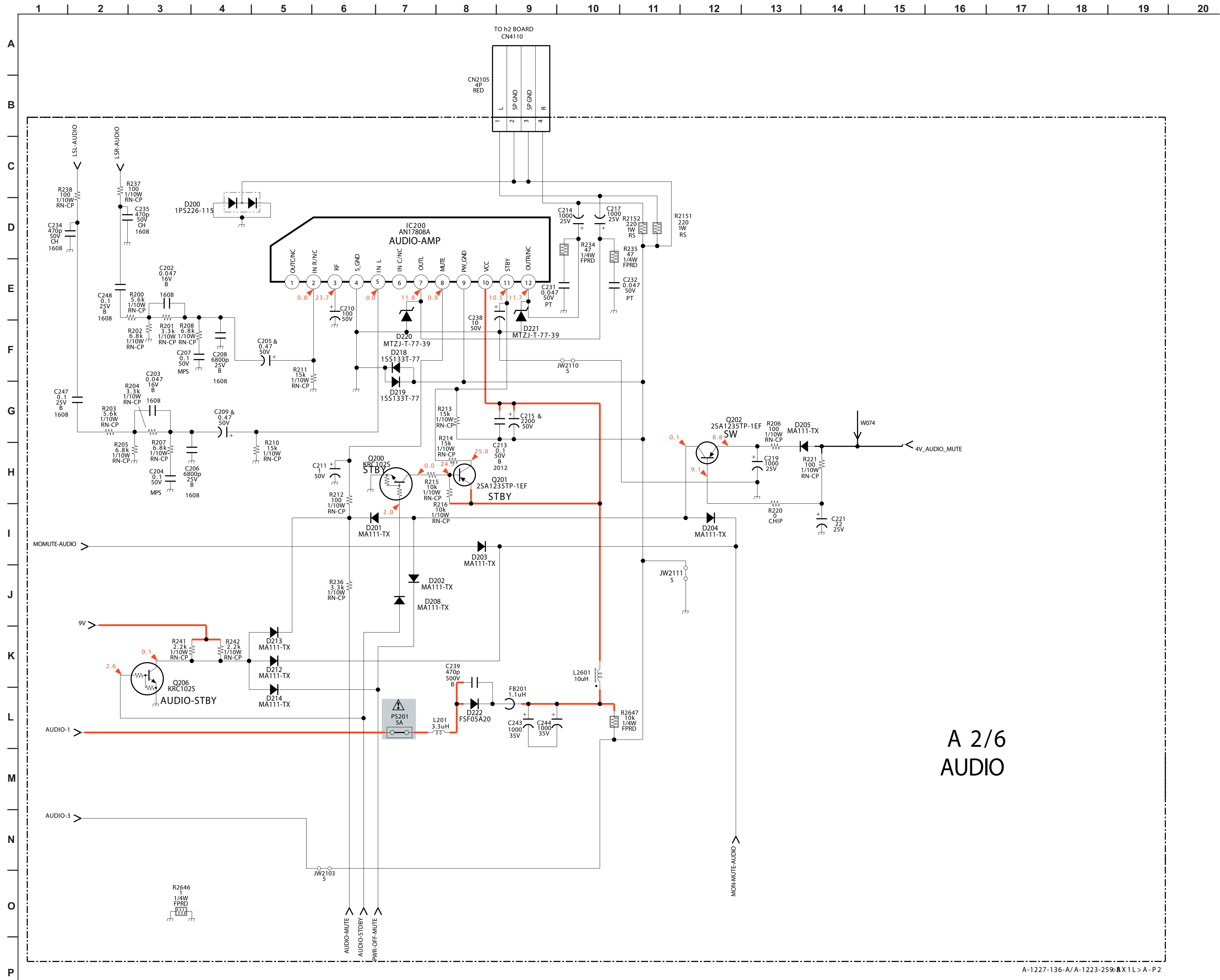
A BOARD SCHEMATIC DIAGRAM (1 OF 6)



A BOARD WAVEFORMS

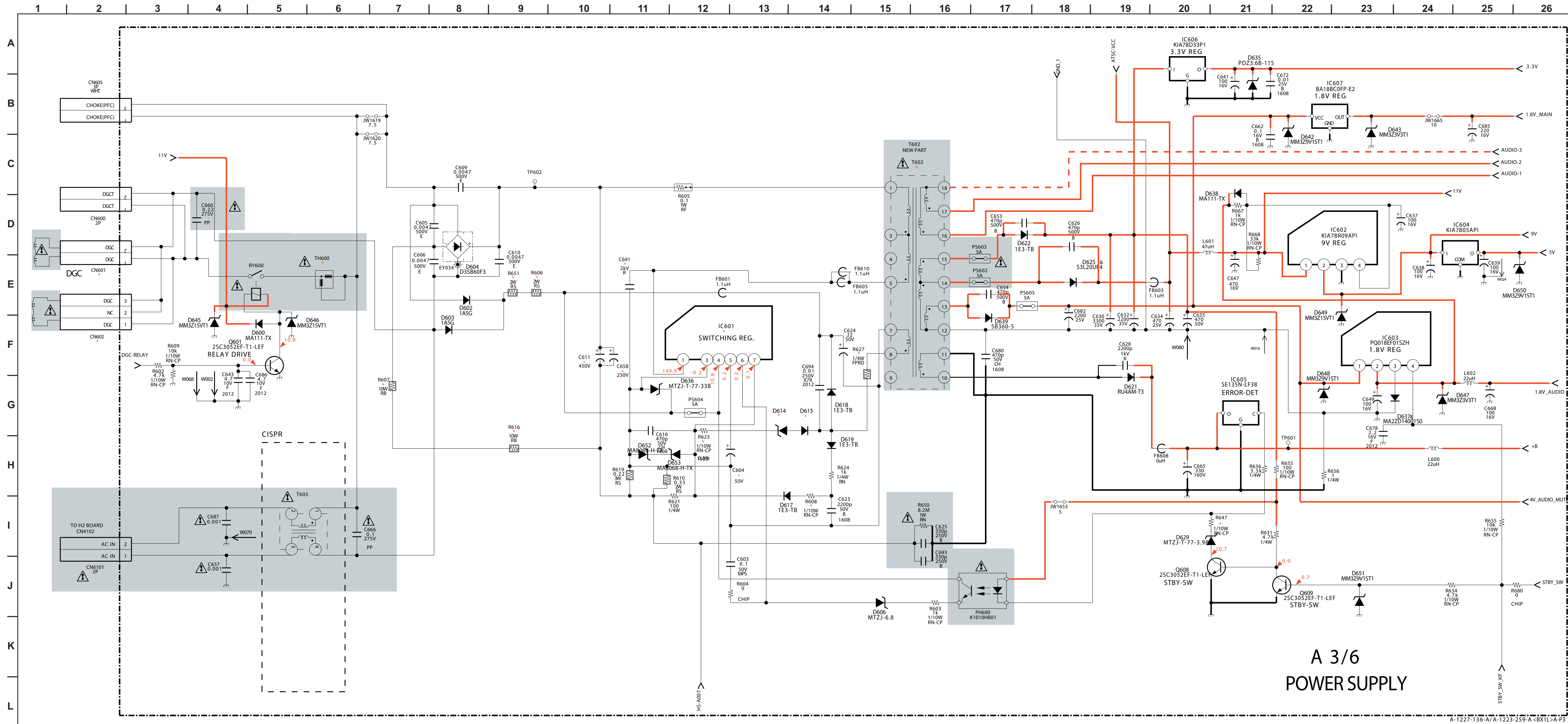


A BOARD SCHEMATIC DIAGRAM (2 OF 6)

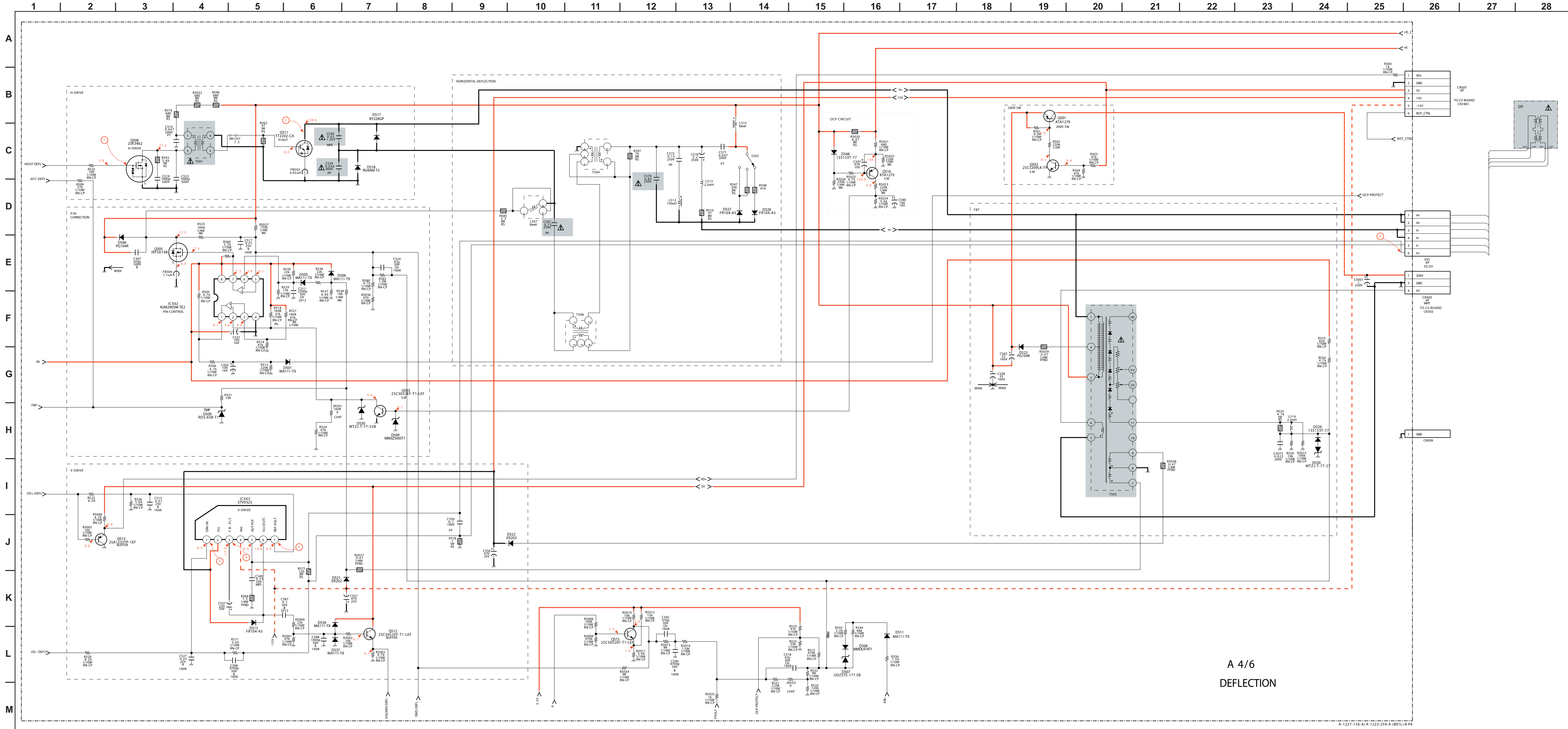


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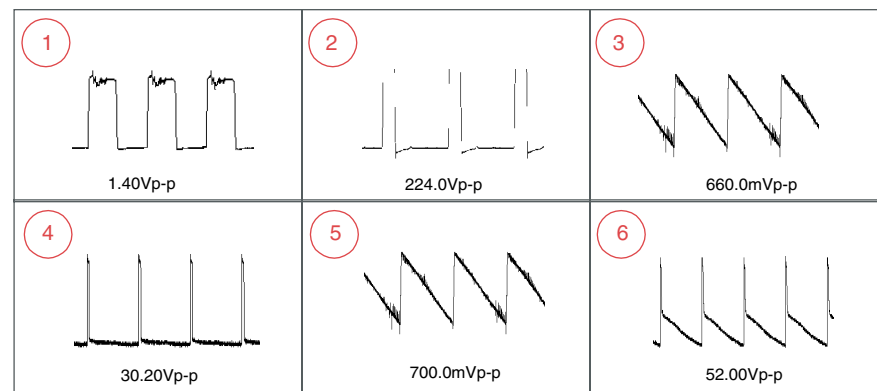
A BOARD SCHEMATIC DIAGRAM (3 OF 6)



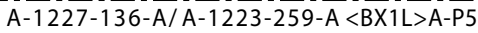
A BOARD SCHEMATIC DIAGRAM (4 OF 6)



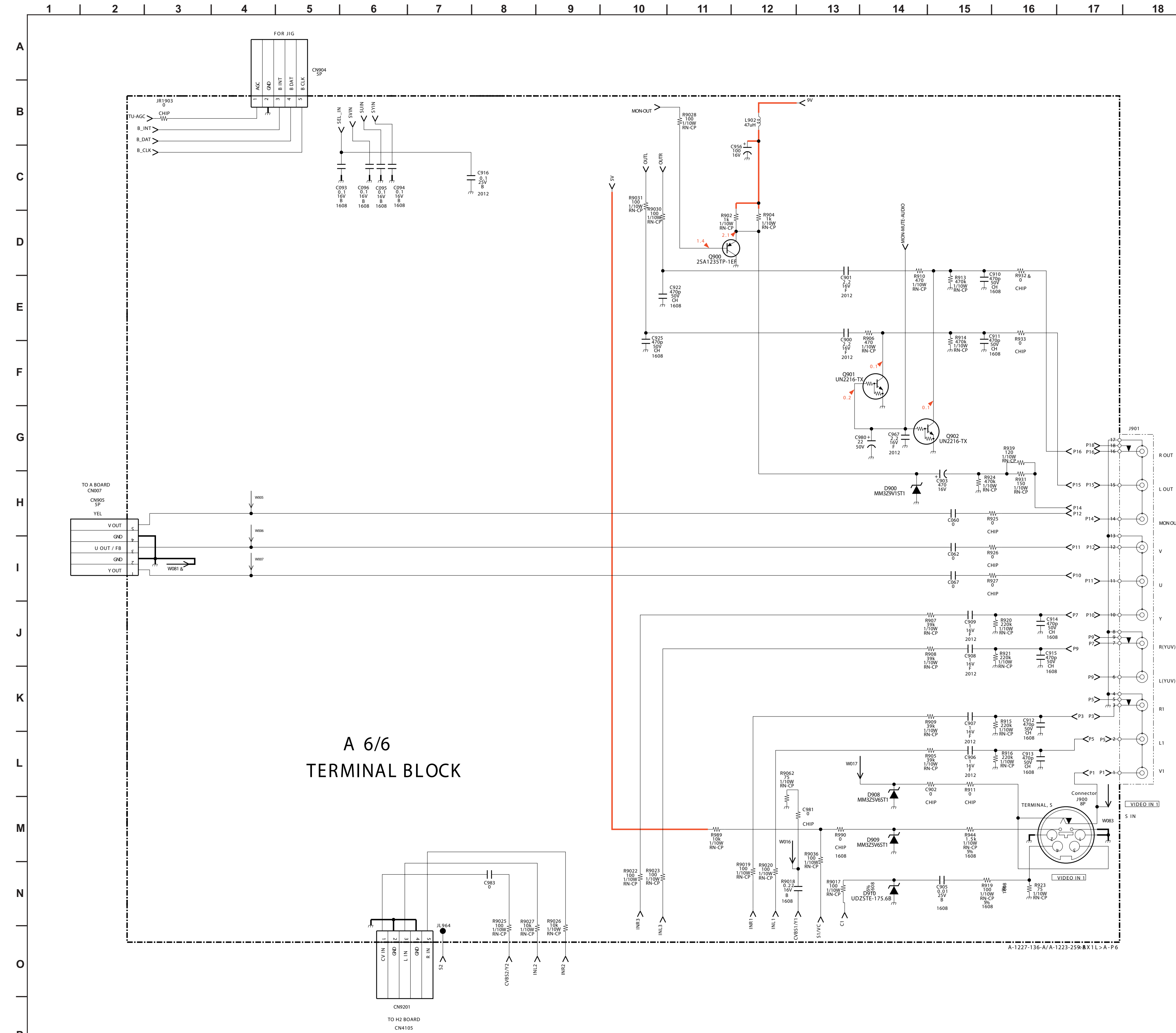
A BOARD WAVEFORMS



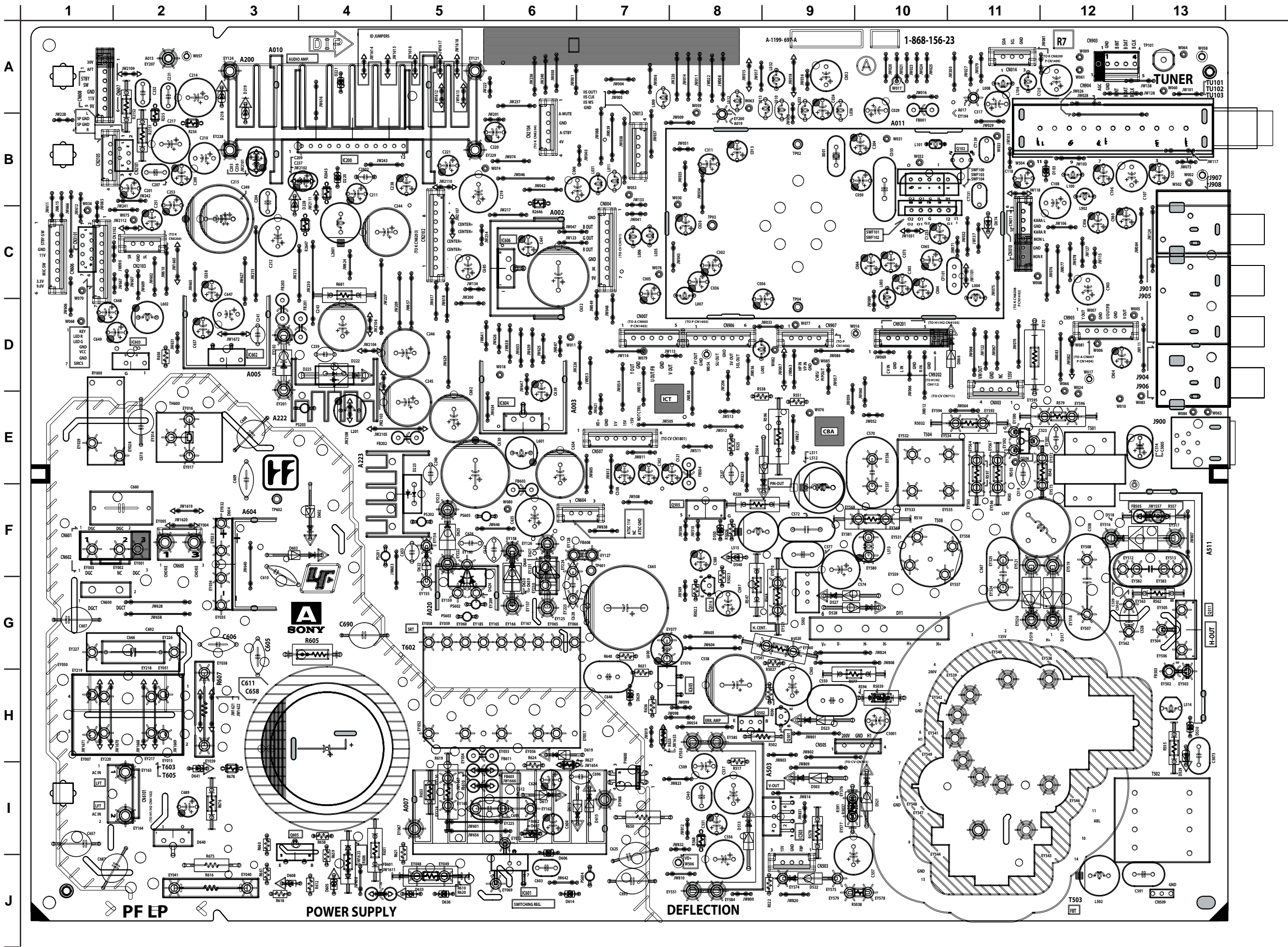
A —
B —
C —
D —
E —
F —
G —
H —
I —
J —
K —
L —
M —
N —
O —
P —



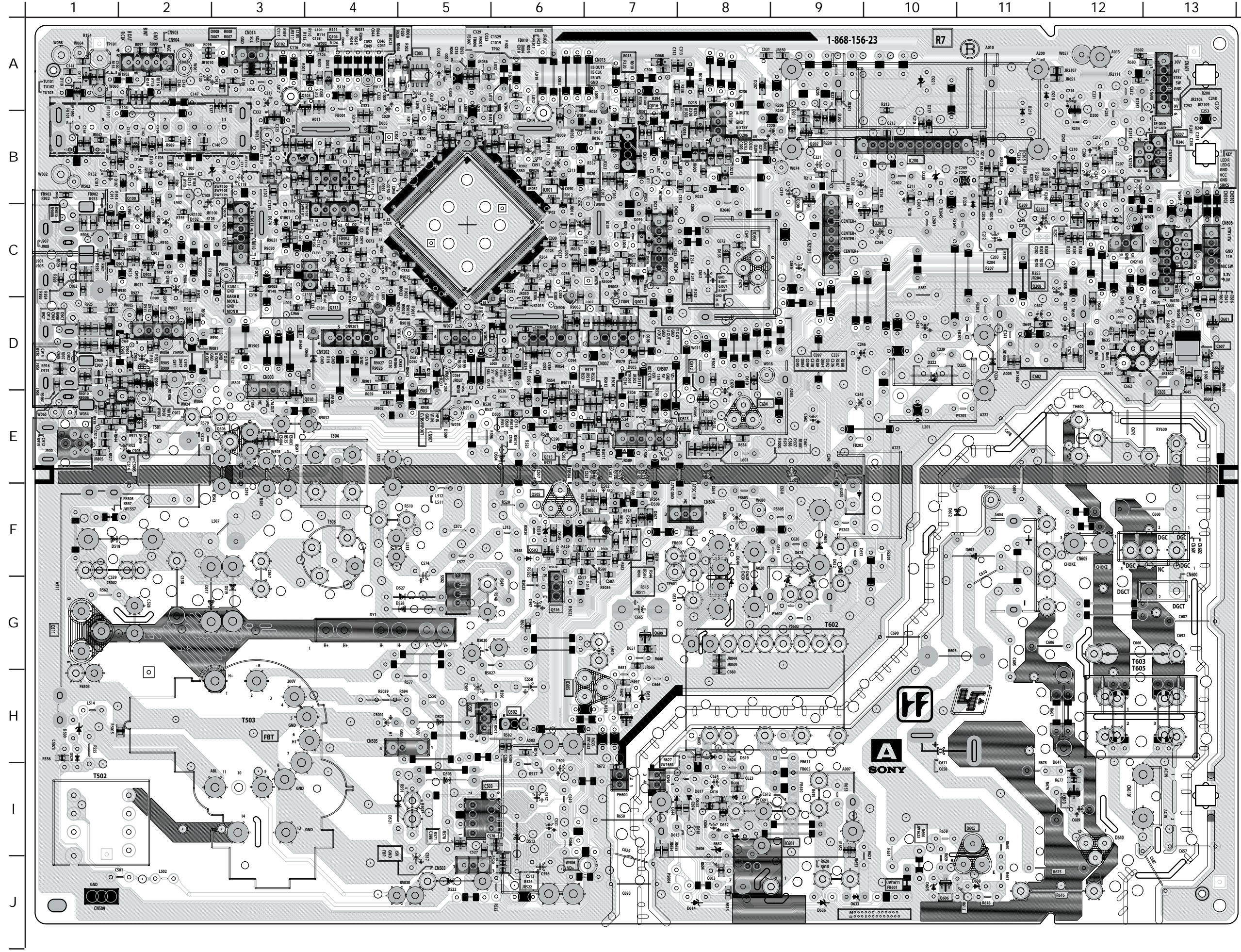
A BOARD SCHEMATIC DIAGRAM (6 OF 6)



A [AUDIO-VIDEO PROCESSOR, AUDIO, POWER SUPPLY, DEFLECTION, TUNER]
COMPONENT SIDE



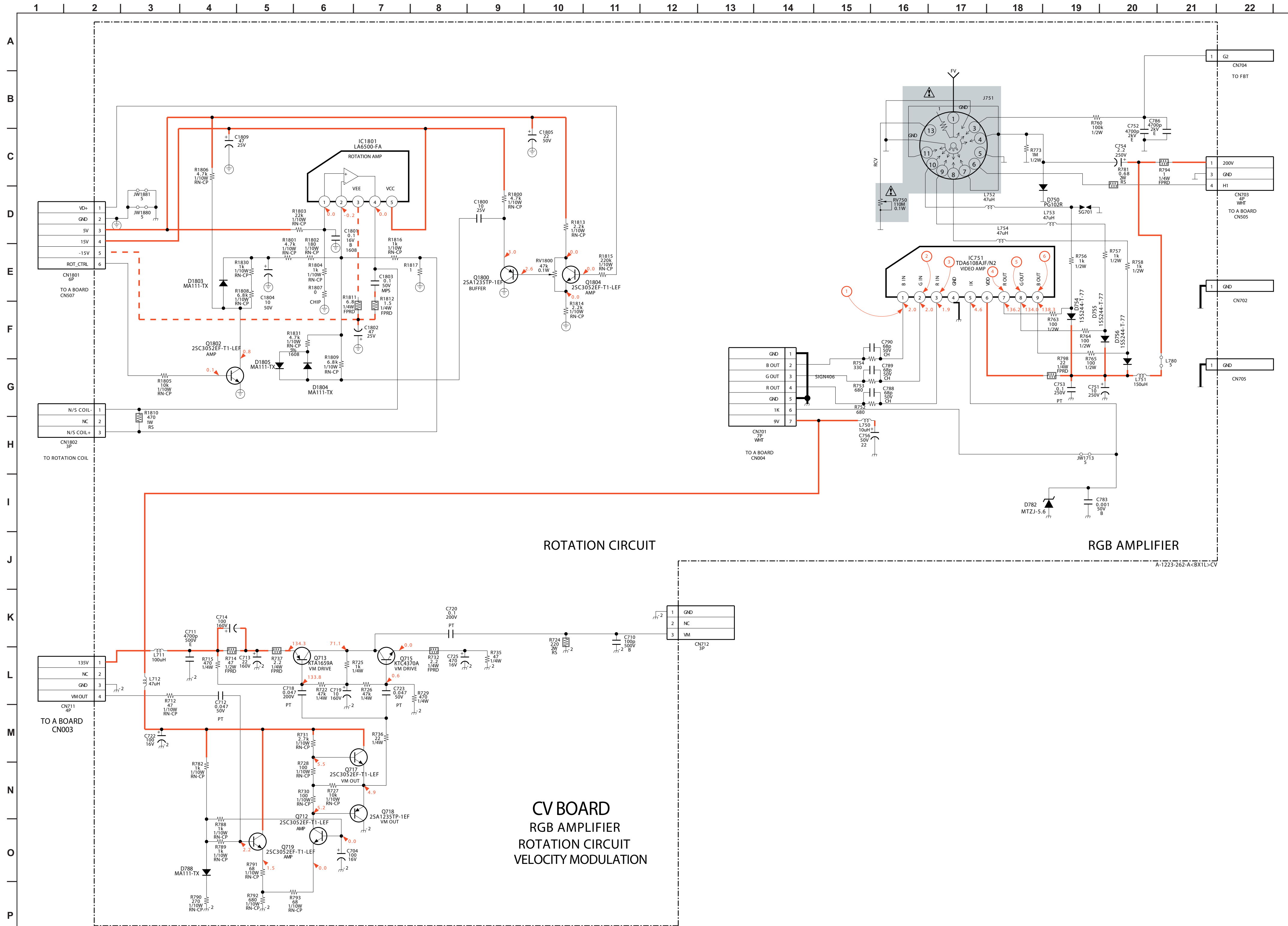
A [AUDIO-VIDEO PROCESSOR, AUDIO, POWER SUPPLY, DEFLECTION, TUNER]
CONDUCTOR SIDE



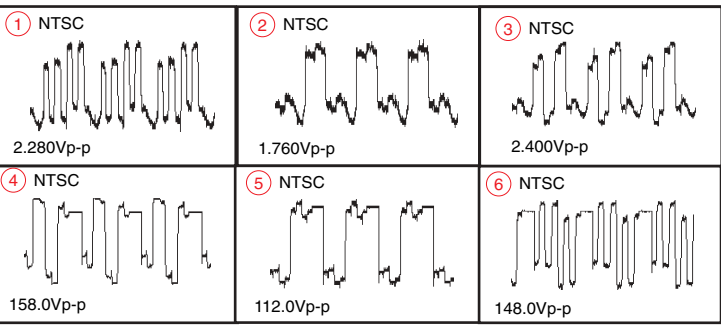
A BOARD LOCATOR LIST

DIODE		DIODE		DIODE		DIODE		DIODE		TRANSISTOR		TRANSISTOR	
D002	A-5	D103	B-3	D506	D-6	D548	F-6	D625	F-9	D650	D-8	Q001	D-7
D003	A-4	D105	B-2	D507	F-7	D549	F-6	D629	H-7	D651	G-7	Q010	E-4
D023	B-7	D106	B-1	D508	F-7	D550	F-6	D635	C-8	D900	C-2	Q016	B-7
D024	B-7	D108	B-2	D509	E-5	D600	D-13	D636	J-9	D908	E-2	Q018	B-7
D025	C-7	D109	B-2	D511	D-7	D602	F-10	D637	D-13	D909	E-2	Q100	B-2
D057	C-7	D202	B-8	D513	I-6	D603	F-11	D638	C-12	D910	E-2	Q102	A-3
D058	C-7	D203	B-8	D517	G-2	D604	F-11	D639	F-8	IC		Q200	B-9
D059	C-7	D204	B-8	D518	F-1	D605	J-10	D640	I-12	IC001	C-6	Q202	B-9
D064	A-4	D205	A-9	D521	I-4	D606	J-11	D641	H-12	IC003	A-5	Q206	B-8
D065	B-4	D212	B-8	D522	J-5	D608	J-11	D642	D-13	IC502	F-7	Q501	H-5
D066	D-3	D213	B-8	D523	H-5	D614	J-9	D643	C-12	IC503	I-6	Q502	H-6
D068	A-7	D214	C-8	D527	G-5	D615	I-7	D644	F-8	IC601	I-9	Q503	F-6
D074	C-3	D222	D-10	D528	G-4	D617	I-8	D645	D-13	IC602	D-11	Q505	F-6
D075	C-6	D223	F-9	D529	H-1	D618	I-8	D646	D-13	IC603	D-13	Q506	E-3
D082	B-7	D501	E-6	D530	H-1	D619	H-8	D647	C-12	IC604	D-9	Q511	G-1
D083	A-6	D504	E-6	D536	D-7	D621	F-8	D648	C-12	IC605	H-6	Q512	D-8
D084	A-6	D505	E-6	D537	E-9	D622	F-9	D649	D-11	IC606	C-8	Q513	E-8
										IC607	D-13	Q515	E-6

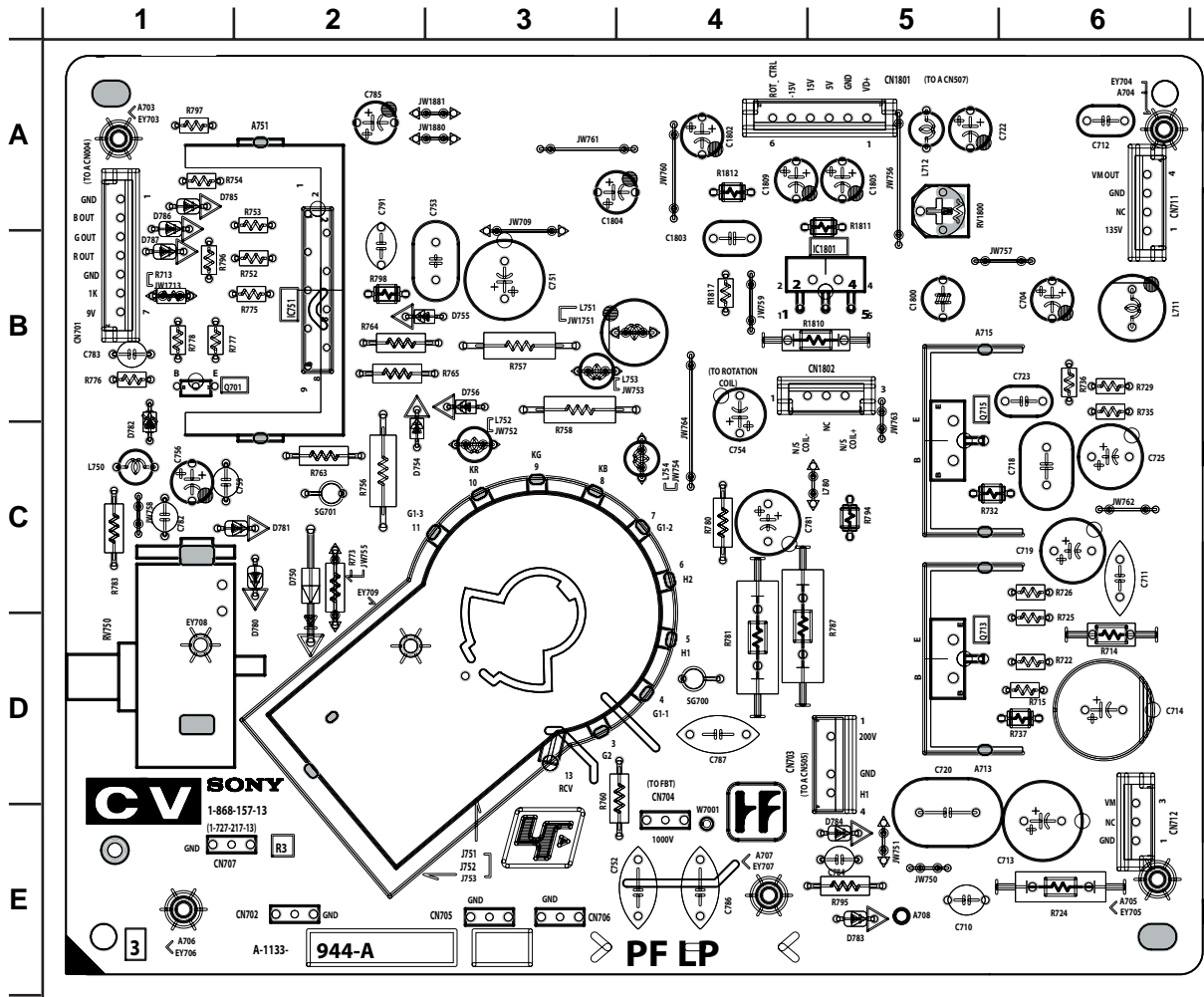
CV BOARD SCHEMATIC DIAGRAM



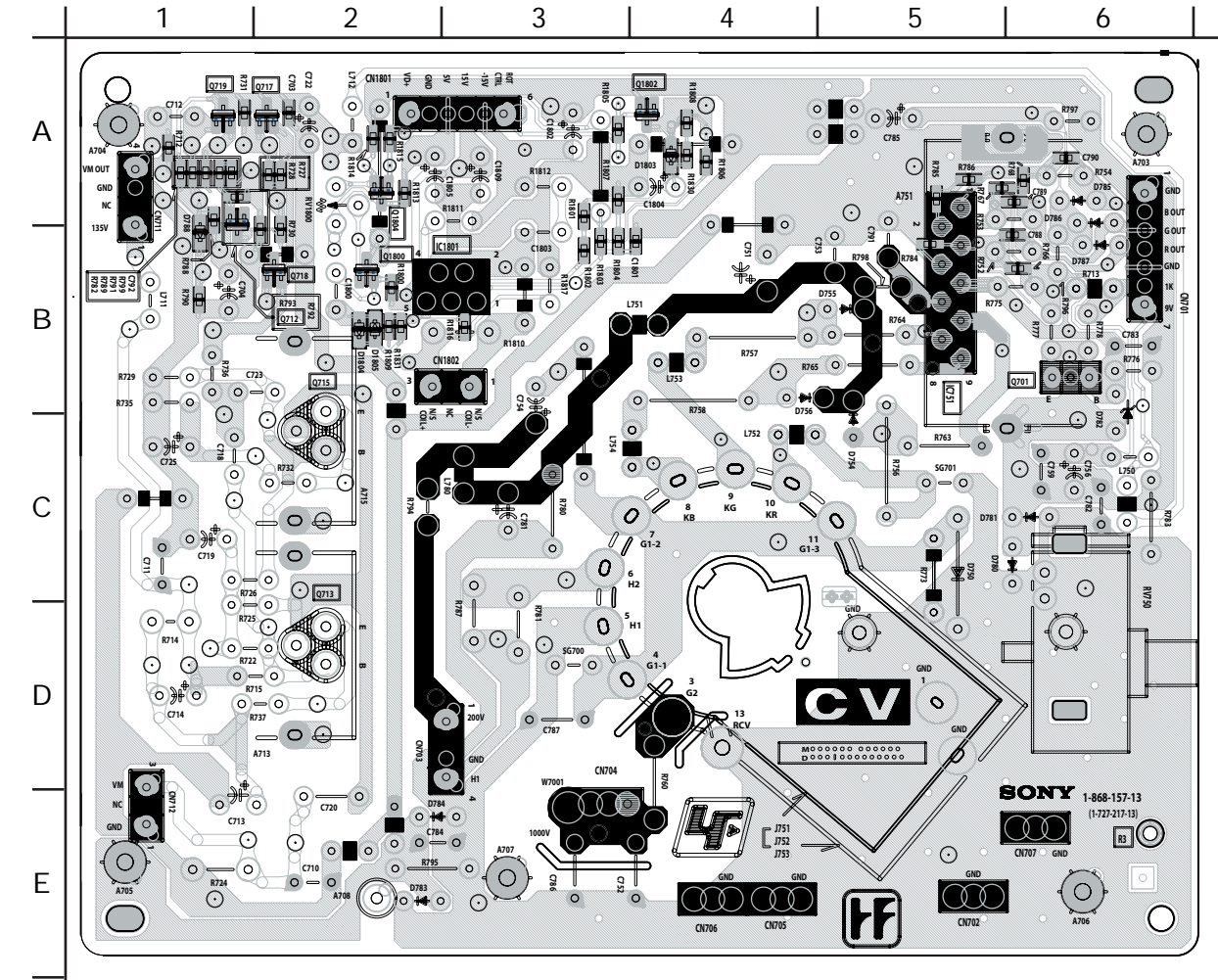
CV BOARD WAVEFORMS



CV [RGB AMPLIFIER, ROTATION CIRCUIT, VELOCITY MODULATION]
COMPONENT SIDE

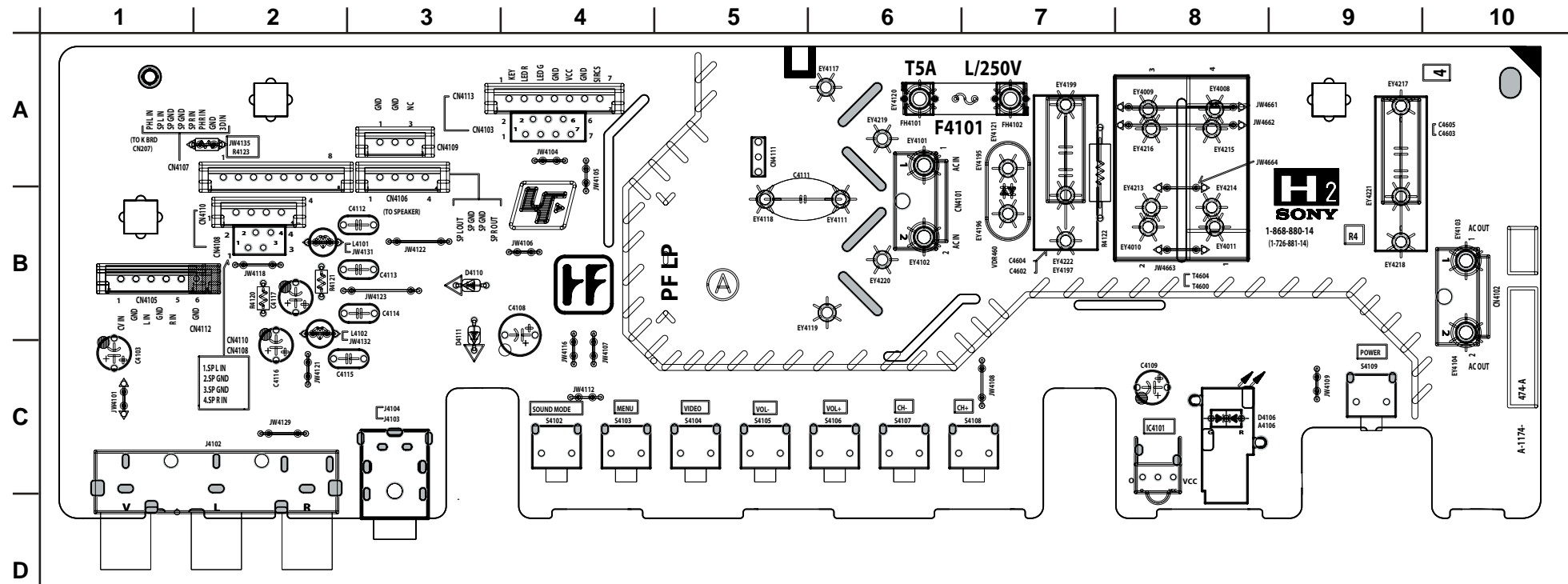


CV [RGB AMPLIFIER, ROTATION CIRCUIT, VELOCITY MODULATION]
CONDUCTOR SIDE

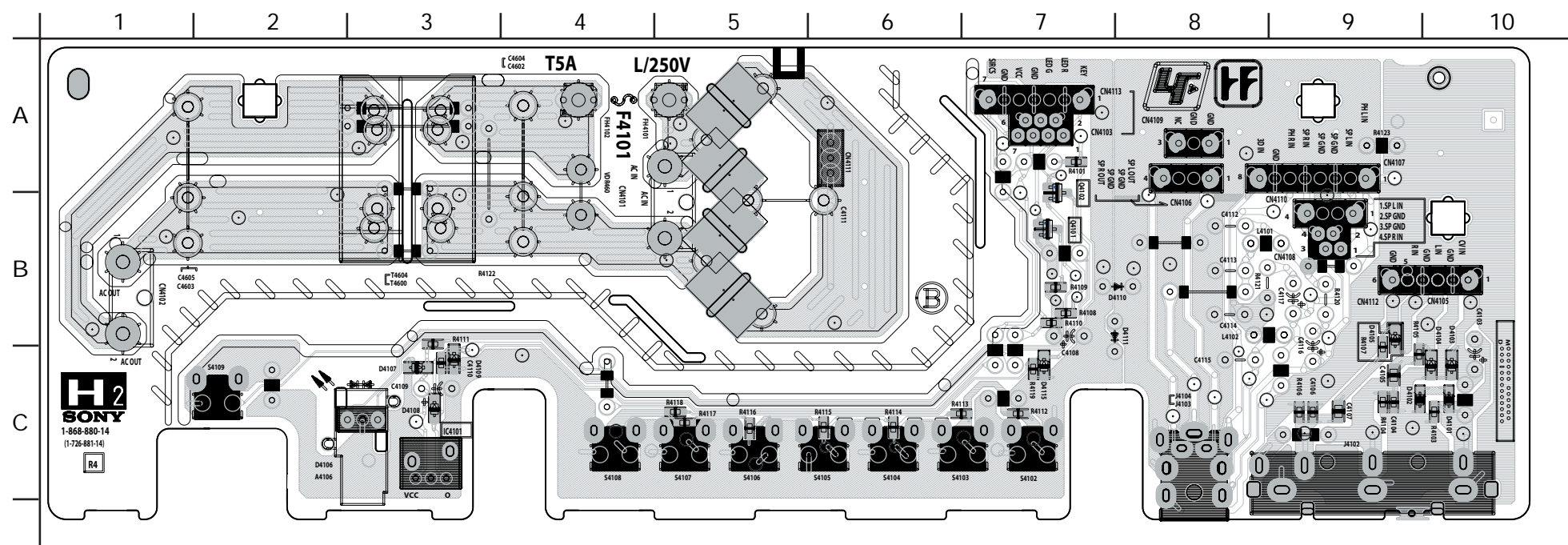




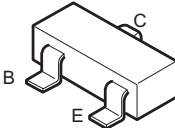
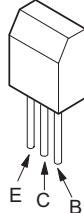
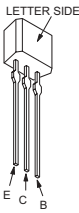
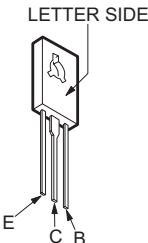
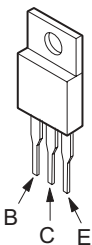
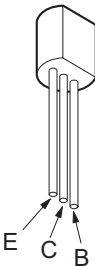
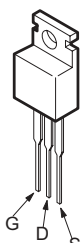
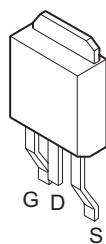
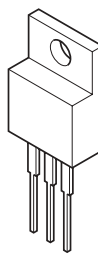
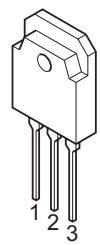
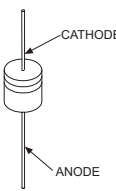
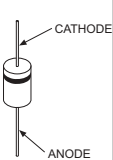
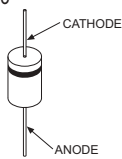
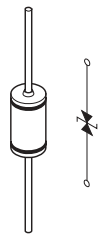
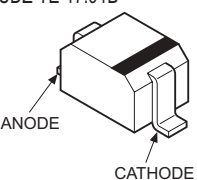
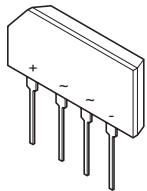
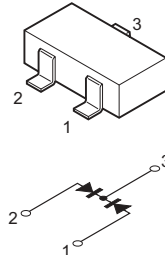
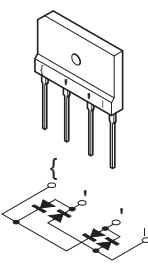
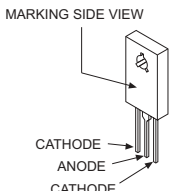
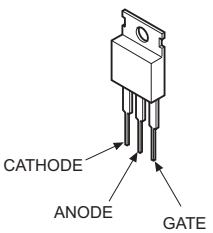
H2 [FRONT PANEL]
COMPONENT SIDE



H2 [FRONT PANEL]
CONDUCTOR SIDE



4-5. SEMICONDUCTORS


2SB709A-QRS-TX 2SD601A-QRS-TX 	2SB734-T-34 2SC3209LK-TP 	2SA1309A-QRSTA 2SC3311A-QRSTA 2SD2144S-TP-UVW 	2SC3840K 	2SA1837 
2SA10910-TPE2 	IRF614 	2SK2663 	2SC4793 	2SD2578-YB 
ERA38-06TP1 ERA82-004TP5 1SS133T-77 D1NS0R-TA MTZJ-T-77-12C MTZJ-T-77-15B MTZJ-T-77-33B MTZJ-T-77-39 	RU-1P ERC06-15S EGP20DPKG23 MTZJ-T-77-5.1C MTZJ-T-77-5.6C MTZJ-T-77-7.5A MTZJ-T-77-10B MTZJ-T-77-30D RGP10-GPKG3 RGP02-17PKG23 RGP15GPKG23 	ERB44-06TP1 1SS83TD GP08DPKG23 RGP10GPKG23 RU4AM-T3 	RD9.1EW-T1 	MA111-TX UDZ-TE-17.5.1B UDZ-TE-17.91B 
D2SB60A-F04 	DAP202K-T-146 	D4SB60L-F 		
D5LC20U 	TF541M 			

SECTION 5: EXPLODED VIEWS

Components not identified by a part number or description are not stocked because they are seldom required for routine service.

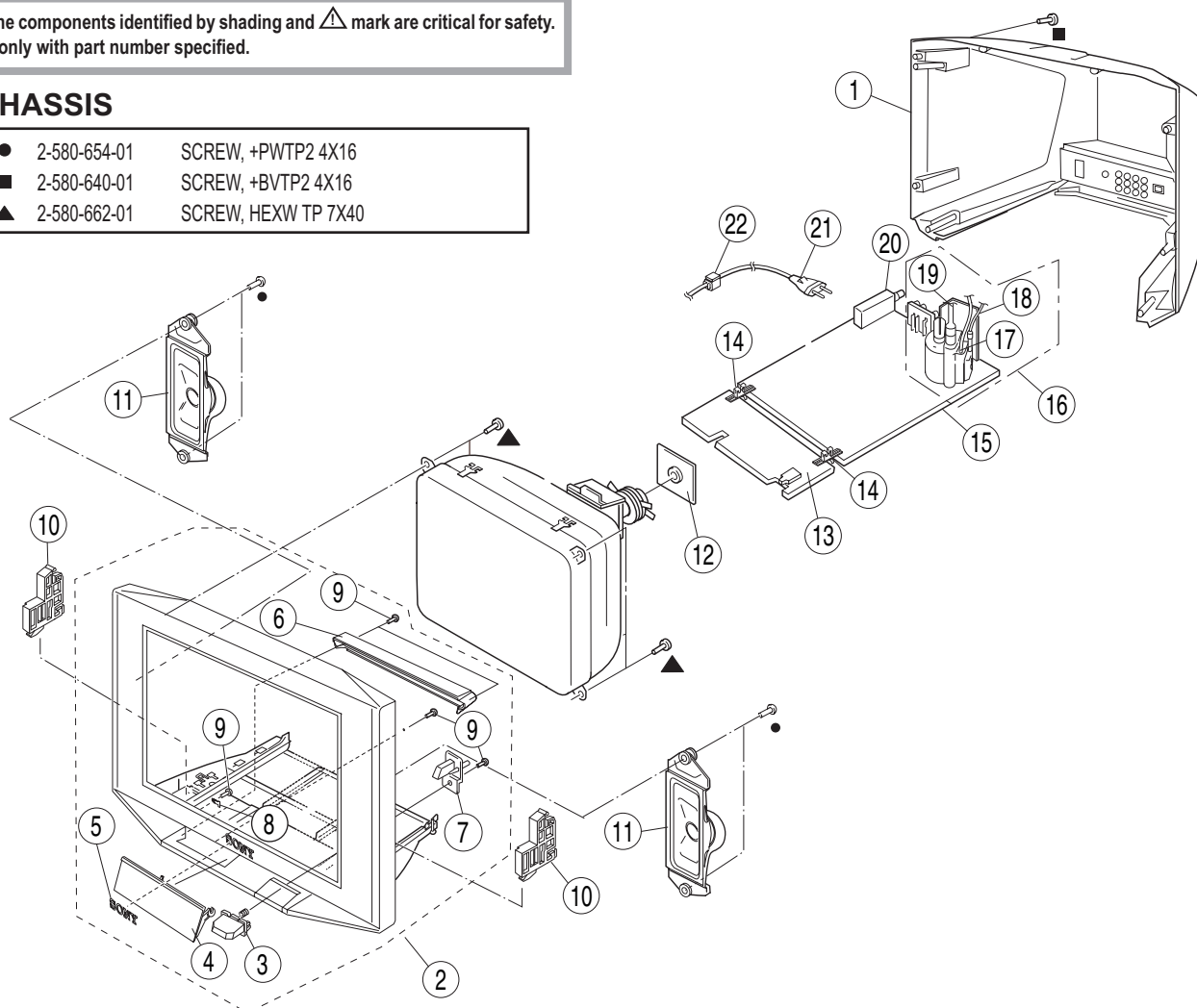
The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.


NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.

5-1. CHASSIS

- 2-580-654-01 SCREW, +PWTP2 4X16
- 2-580-640-01 SCREW, +BVTP2 4X16
- ▲ 2-580-662-01 SCREW, HEXW TP 7X40

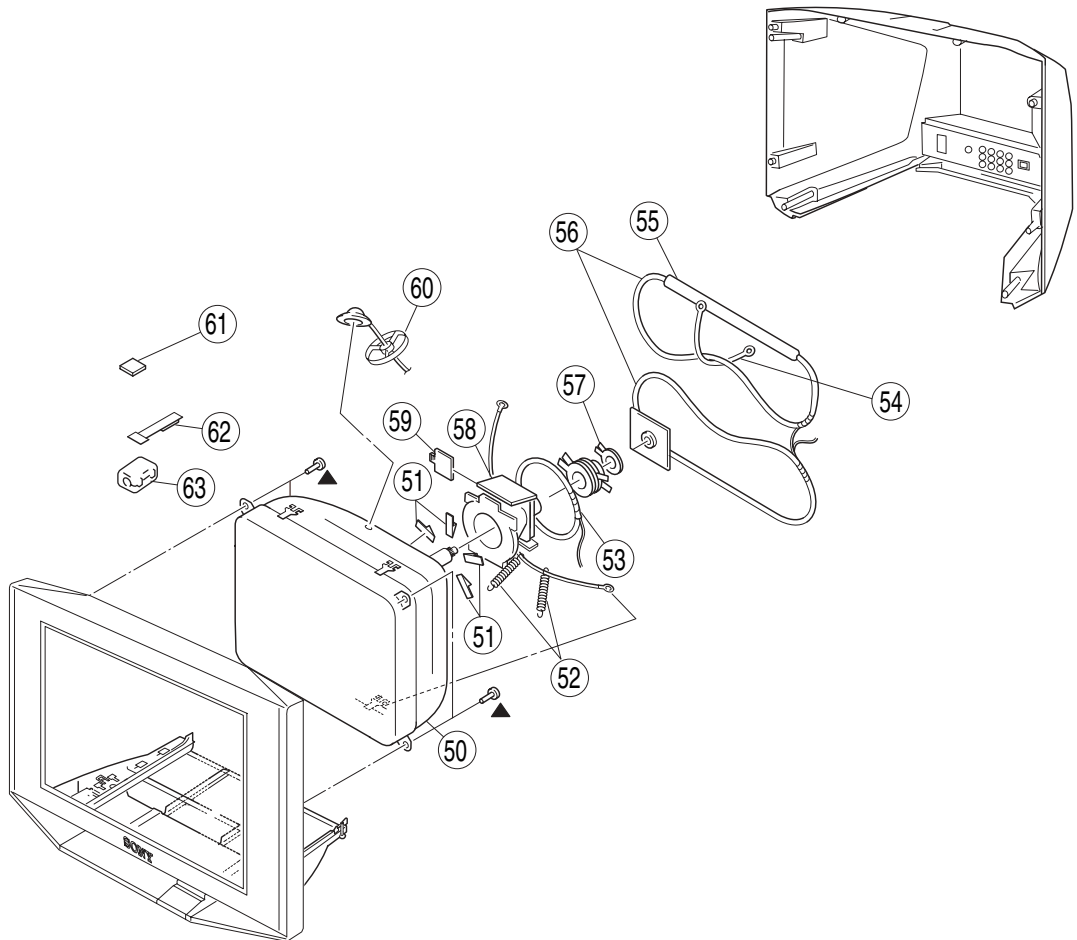








REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
1	2-666-828-01	COVER, REAR		* 15	A-1223-259-A	A BOARD, COMPLETE (LATIN NORTH MODELS ONLY)	[17-19]
2	X-2176-425-1	BEZNET ASSEMBLY	[3-9]			The high-voltage leads associated with the FBT on this	
3	2-666-830-13	BUTTON, POWER				A Board are not included and must be ordered separately. [See 17-19]	
4	2-666-831-31	DOOR		* 15	A-1227-136-A	A BOARD, COMPLETE (LATIN SOUTH MODELS ONLY)	[17-19]
5	4-046-160-31	EMBLEM, SONY NO.9				The high-voltage leads associated with the FBT on this	
6	2-666-833-01	COVER, CONTROL				A Board are not included and must be ordered separately. [See 17-19]	
7	2-666-832-02	GUIDE, LIGHT		▲ 16	1-453-479-41	FBT ASSEMBLY NX-4910//M	
8	2-682-963-01	SPRING, DOOR		▲ 17	1-900-702-30	LEAD ASSEMBLY, FOCUS	
9	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3		▲ 18	1-900-701-49	LEAD ASSEMBLY, G2	
10	2-666-834-01	SUPPORT, CRT		▲ 19	1-417-665-31	HIGH-VOLTAGE CAP ASSEMBLY	
11	1-826-364-11	LOUDSPEAKER (6.5X15CM)		20	1-693-729-11	TUNER	
* 12	A-1223-262-A	CV (VAR) BOARD, MOUNTED		▲ 21	1-827-949-12	CORD, AC POWER (WITH CONNECTOR) (LATIN NORTH MODELS ONLY)	
* 13	A-1223-257-A	H2 (VAR) BOARD, MOUNTED		▲ 21	1-824-968-11	POWER CORD (WITH CONNECTOR) (LATIN SOUTH MODELS ONLY)	
* 14	2-668-944-01	HOLDER, PWB		22	4-022-115-00	HOLDER, AC CORD	

NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.


5-2. PICTURE TUBE

 2-580-662-01 SCREW, HEXW TP 7X40



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
 50	8-735-261-05	CRT 29RSN2		* 60	2-656-888-02	HOLDER, HV CABLE COMBI	
51	4-046-600-11	SPACER, DY		61	1-452-885-11	MAGNET, LANDING	
52	4-036-329-01	SPRING (B), TENSION		62	4-083-414-01	PIECE A(110), CONV CORRECT	
 53	1-419-363-11	COIL, NA ROTATION (RT-200)		63	1-469-089-21	FILTER, CLAMP (FERRITE CORE)	
54	4-079-376-01	BAND, DGC					
55	4-100-433-11	TUBE, DGC (A)					
 56	1-457-236-11	DEGAUSSING COIL (LATIN NORTH MODELS ONLY)					
 56	1-419-523-21	COIL, DEGAUSSING (LATIN SOUTH MODELS ONLY)					
 57	8-453-026-31	NECK ASSEMBLY (NA2921-S3)					
 58	8-451-494-81	DY Y29RSA-V3					
59	4-077-228-02	PIECE, TLH CONVERGENCE					

SECTION 6: ELECTRICAL PARTS LIST

NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.





* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

RESISTORS

- All resistors are in ohms
- F : nonflammable
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.



When ordering parts by reference number, please include the board name.

REF. NO.	PART NO.	DESCRIPTION	VALUES	REF. NO.	PART NO.	DESCRIPTION	VALUES
	A-1223-259-A	A BOARD, COMPLETE (LATIN NORTH MODELS ONLY)		C026	1-126-947-11	ELECT	47μF 20% 35V
	A-1227-136-A	A BOARD, COMPLETE (LATIN SOUTH MODELS ONLY)		C028	1-107-826-11	CERAMIC CHIP	0.1μF 10% 16V
	The high-voltage leads associated with the FBT on this A Board are not included and must be ordered separately.			C029	1-126-925-91	ELECT	470μF 20% 10V
				C030	1-127-715-91	CERAMIC CHIP	0.22μF 10% 16V
				C031	1-162-964-11	CERAMIC CHIP	0.001μF 10% 50V
	1-417-665-31	HIGH-VOLGATE CAP ASSY		C036	1-126-933-11	ELECT	100μF 20% 16V
	1-900-702-30	LEAD ASSY, FOCUS		C037	1-165-908-11	CERAMIC CHIP	1μF 10% 10V
	1-900-701-49	LEAD ASSY, G2		C038	1-107-826-11	CERAMIC CHIP	0.1μF 10% 16V
	4-382-854-01	SCREW (M3X8), P, SW (+)		C041	1-162-968-11	CERAMIC CHIP	0.0047μF 10% 50V
	4-382-854-01	SCREW (M3X8), P, SW (+)		C042	1-127-715-91	CERAMIC CHIP	0.22μF 10% 16V
	WIRE PIN			C044	1-164-505-11	CERAMIC CHIP	2.2μF 16V
* A017	4-102-022-01	PIN(30), WIRE		C046	1-162-969-11	CERAMIC CHIP	0.0068μF 10% 25V
* A019	4-102-022-01	PIN(30), WIRE		C048	1-127-715-91	CERAMIC CHIP	0.22μF 10% 16V
	CAPACITOR			C049	1-164-227-11	CERAMIC CHIP	0.022μF 10% 25V
C001	1-162-927-11	CERAMIC CHIP	100pF 5% 50V	C050	1-126-964-11	ELECT	10μF 20% 50V
C002	1-126-935-11	ELECT	470μF 20% 16V	C052	1-162-964-11	CERAMIC CHIP	0.001μF 10% 50V
C003	1-162-927-11	CERAMIC CHIP	100pF 5% 50V	C053	1-164-227-11	CERAMIC CHIP	0.022μF 10% 25V
C004	1-126-933-11	ELECT	100μF 20% 16V	C054	1-107-826-11	CERAMIC CHIP	0.1μF 10% 16V
C005	1-126-933-11	ELECT	100μF 20% 16V	C055	1-100-829-11	FILM	0.15μF 5% 250V
C006	1-126-925-91	ELECT	470μF 20% 10V	C056	1-126-933-11	ELECT	100μF 20% 16V
C010	1-164-315-11	CERAMIC CHIP	470pF 5% 50V	C057	1-162-970-11	CERAMIC CHIP	0.01μF 10% 25V
C013	1-126-933-11	ELECT	100μF 20% 16V	C060	1-216-864-11	SHORT CHIP	
C018	1-162-970-11	CERAMIC CHIP	0.01μF 10% 25V	C061	1-162-968-11	CERAMIC CHIP	0.0047μF 10% 50V
C020	1-107-826-11	CERAMIC CHIP	0.1μF 10% 16V	C062	1-216-864-11	SHORT CHIP	
C021	1-162-927-11	CERAMIC CHIP	100pF 5% 50V	C063	1-107-826-11	CERAMIC CHIP	0.1μF 10% 16V
C022	1-127-715-91	CERAMIC CHIP	0.22μF 10% 16V	C064	1-126-961-11	ELECT	2.2μF 20% 50V
C023	1-164-505-11	CERAMIC CHIP	2.2μF 16V	C065	1-126-962-11	ELECT	3.3μF 20% 50V
C024	1-126-965-91	ELECT	22μF 20% 50V	C067	1-216-864-11	SHORT CHIP	
C025	1-127-715-91	CERAMIC CHIP	0.22μF 10% 16V	C069	1-107-826-11	CERAMIC CHIP	0.1μF 10% 16V
				C070	1-107-826-11	CERAMIC CHIP	0.1μF 10% 16V
				C073	1-126-961-11	ELECT	2.2μF 20% 50V
				C080	1-162-964-11	CERAMIC CHIP	0.001μF 10% 50V
				C081	1-162-964-11	CERAMIC CHIP	0.001μF 10% 50V
				C089	1-162-964-11	CERAMIC CHIP	0.001μF 10% 50V
				C090	1-162-927-11	CERAMIC CHIP	100pF 5% 50V



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
C091	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C232	1-137-374-11	MYLAR	0.047μF	5%	50V
C092	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C234	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C093	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C235	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C094	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C238	1-126-964-11	ELECT	10μF	20%	50V
C095	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C239	1-102-228-00	CERAMIC	470pF	10%	500V
C096	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V	C243	1-126-972-11	ELECT	1000μF	20%	50V
C101	1-126-964-11	ELECT	10μF	20%	50V	C244	1-126-972-11	ELECT	1000μF	20%	50V
C102	1-162-915-11	CERAMIC CHIP	10pF	0.50pF	50V	C247	1-100-566-91	CERAMIC CHIP	0.1μF	10%	25V
C104	1-162-915-11	CERAMIC CHIP	10pF	0.50pF	50V	C248	1-100-566-91	CERAMIC CHIP	0.1μF	10%	25V
C106	1-126-964-11	ELECT	10μF	20%	50V	C300	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V
C107	1-126-935-11	ELECT	470μF	20%	16V	C301	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C108	1-126-935-11	ELECT	470μF	20%	16V	C302	1-126-963-11	ELECT	4.7μF	20%	50V
C109	1-162-968-11	CERAMIC CHIP	0.0047μF	10%	50V	C303	1-126-933-11	ELECT	100μF	20%	16V
C111	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C304	1-126-933-11	ELECT	100μF	20%	16V
C112	1-162-910-11	CERAMIC CHIP	5pF	0.25pF	50V	C308	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C115	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C311	1-126-961-11	ELECT	2.2μF	20%	50V
C116	1-162-968-11	CERAMIC CHIP	0.0047μF	10%	50V	C312	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C117	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C313	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C118	1-126-965-91	ELECT	22μF	20%	50V	C316	1-125-891-11	CERAMIC CHIP	0.47μF	10%	10V
C119	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	C317	1-126-934-11	ELECT	220μF	20%	16V
C120	1-126-935-11	ELECT	470μF	20%	16V	C318	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C131	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C319	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C133	1-162-927-11	CERAMIC CHIP	100pF	5%	50V	C320	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C135	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C321	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V
C137	1-162-923-11	CERAMIC CHIP	47pF	5%	50V	C322	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C138	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V	C323	1-112-034-91	CERAMIC CHIP	0.01μF	5%	50V
C140	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V	C325	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C142	1-162-923-11	CERAMIC CHIP	47pF	5%	50V	C328	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C148	1-100-566-91	CERAMIC CHIP	0.1μF	10%	25V	C332	1-162-964-11	CERAMIC CHIP	0.001μF	10%	50V
C202	1-165-176-11	CERAMIC CHIP	0.047μF	10%	16V	C333	1-100-566-91	CERAMIC CHIP	0.1μF	10%	25V
C203	1-165-176-11	CERAMIC CHIP	0.047μF	10%	16V	C335	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V
C204	1-136-497-81	FILM	0.1μF	5%	50V	C336	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C205	1-126-959-11	ELECT	0.47μF	20%	50V	C337	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C206	1-162-969-11	CERAMIC CHIP	0.0068μF	10%	25V	C338	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V
C207	1-136-497-81	FILM	0.1μF	5%	50V	C502	1-126-933-11	ELECT	100μF	20%	16V
C208	1-162-969-11	CERAMIC CHIP	0.0068μF	10%	25V	C507	1-102-228-00	CERAMIC	470pF	10%	500V
C209	1-126-959-11	ELECT	0.47μF	20%	50V	C511	1-164-690-91	CERAMIC CHIP	0.0022μF	5%	50V
C210	1-126-968-11	ELECT	100μF	20%	50V	C513	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C211	1-126-960-11	ELECT	1μF	20%	50V	C514	1-106-383-00	MYLAR	0.047μF	10%	200V
C213	1-115-339-11	CERAMIC CHIP	0.1μF	10%	50V	C517	1-162-970-11	CERAMIC CHIP	0.01μF	10%	25V
C214	1-126-942-61	ELECT	1000μF	20%	25V	C518	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C215	1-128-550-11	ELECT	2200μF	20%	50V	C519	1-164-645-11	CERAMIC	1000pF	10%	500V
C217	1-126-942-61	ELECT	1000μF	20%	25V	C521	1-126-933-11	ELECT	100μF	20%	16V
C219	1-126-942-61	ELECT	1000μF	20%	25V	C523	1-164-645-11	CERAMIC	1000pF	10%	500V
C231	1-137-374-11	MYLAR	0.047μF	5%	50V	C524	1-162-923-11	CERAMIC CHIP	47pF	5%	50V

NOTE: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
C527	1-162-970-11	CERAMIC CHIP	0.01 μ F	10%	25V	C639	1-126-933-11	ELECT	100 μ F	20%	16V
C537	1-107-911-11	ELECT	220 μ F	20%	50V	C641	1-107-882-91	ELECT	100 μ F	20%	16V
Δ C538	1-117-651-11	FILM	20000pF	3%	1.2KV	C643	1-117-720-11	CERAMIC CHIP	4.7 μ F		10V
Δ C539	1-130-895-00	FILM	0.056 μ F	5%	400V	C647	1-126-935-11	ELECT	470 μ F	20%	16V
C540	1-136-171-00	FILM	0.33 μ F	5%	50V	C649	1-126-933-11	ELECT	100 μ F	20%	16V
C550	1-106-220-00	MYLAR	0.1 μ F	10%	100V	C653	1-102-228-00	CERAMIC	470pF	10%	500V
C556	1-126-941-11	ELECT	470 μ F	20%	25V	C654	1-104-330-91	CERAMIC	470pF	10%	1KV
C557	1-126-941-11	ELECT	470 μ F	20%	25V	Δ C657	1-113-889-11	CERAMIC	0.001 μ F	20%	250V
C558	1-123-024-21	ELECT	33 μ F		160V	C658	1-100-957-11	ELECT(BLOCK)	820 μ F	20%	250V
C565	1-107-645-11	ELECT	22 μ F	20%	200V		(LATIN NORTH MODELS ONLY)				
Δ C567	1-117-813-91	FILM	0.75 μ F	5%	250V	Δ C660	1-165-539-31	FILM	0.22 μ F	10%	275V
Δ C570	1-115-521-11	FILM	0.82 μ F	5%	250V	C662	1-107-826-11	CERAMIC CHIP	0.1 μ F	10%	16V
C572	1-117-661-71	FILM	0.15 μ F	5%	250V	C665	1-107-855-12	ELECT(BLOCK)	330 μ F		160V
C574	1-107-683-11	ELECT	2.2 μ F		250V	Δ C666	1-165-538-31	FILM	0.1 μ F	10%	275V
C577	1-106-383-00	MYLAR	0.047 μ F	5%	200V	C668	1-126-933-11	ELECT	100 μ F	20%	16V
C580	1-126-933-11	ELECT	100 μ F	20%	16V	C672	1-162-970-11	CERAMIC CHIP	0.01 μ F	10%	25V
C587	1-115-339-11	CERAMIC CHIP	0.1 μ F	10%	50V	C678	1-164-505-11	CERAMIC CHIP	2.2 μ F		16V
C588	1-162-964-11	CERAMIC CHIP	0.001 μ F	10%	50V	C680	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C590	1-162-968-11	CERAMIC CHIP	0.0047 μ F	10%	50V	C682	1-126-943-11	ELECT	2200 μ F	20%	25V
C592	1-164-315-11	CERAMIC CHIP	470pF	5%	50V	C685	1-126-934-11	ELECT	220 μ F	20%	16V
C597	1-126-925-91	ELECT	470 μ F	20%	10V	C686	1-117-720-11	CERAMIC CHIP	4.7 μ F		10V
C598	1-162-968-11	CERAMIC CHIP	0.0047 μ F	10%	50V	Δ C687	1-113-889-11	CERAMIC	0.001 μ F	20%	250V
C603	1-136-497-81	FILM	0.1 μ F	5%	50V	C691	1-104-331-11	CERAMIC	0.0022 μ F	10%	1KV
C604	1-126-962-11	ELECT	3.3 μ F	20%	50V		(LATIN NORTH MODELS ONLY)				
	(LATIN NORTH MODELS ONLY)					C691	1-117-214-11	CERAMIC	0.001 μ F	10%	2KV
C604	1-126-961-11	ELECT	2.2 μ F	20%	50V		(LATIN SOUTH MODELS ONLY)				
	(LATIN SOUTH MODELS ONLY)					Δ C693	1-127-942-51	CERAMIC	330pF	10%	250V
C605	1-161-830-00	CERAMIC	0.0047 μ F	99%	500V	C694	1-100-761-21	CERAMIC CHIP	0.01 μ F	10%	250V
C606	1-161-830-00	CERAMIC	0.0047 μ F	99%	500V	C900	1-164-505-11	CERAMIC CHIP	2.2 μ F		16V
C609	1-161-830-00	CERAMIC	0.0047 μ F	99%	500V	C901	1-164-505-11	CERAMIC CHIP	2.2 μ F		16V
C610	1-161-830-00	CERAMIC	0.0047 μ F	99%	500V	C902	1-216-864-11	SHORT CHIP			
C611	1-117-752-11	ELECT(BLOCK)	330 μ F	20%	450V	C903	1-126-935-11	ELECT	470 μ F	20%	16V
	(LATIN SOUTH MODELS ONLY)					C905	1-162-970-11	CERAMIC CHIP	0.01 μ F	10%	25V
C616	1-164-315-11	CERAMIC CHIP	470pF	5%	50V	C906	1-164-346-11	CERAMIC CHIP	1 μ F		16V
C623	1-162-966-11	CERAMIC CHIP	0.0022 μ F	10%	50V	C907	1-164-346-11	CERAMIC CHIP	1 μ F		16V
C624	1-126-965-91	ELECT	22 μ F	20%	50V	C908	1-164-346-11	CERAMIC CHIP	1 μ F		16V
Δ C625	1-127-942-51	CERAMIC	330pF	10%	250V	C909	1-164-346-11	CERAMIC CHIP	1 μ F		16V
C626	1-104-330-91	CERAMIC	470pF	10%	1KV	C910	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C628	1-104-331-11	CERAMIC	0.0022 μ F	10%	1KV	C911	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C630	1-128-549-11	ELECT	3300 μ F	20%	35V	C912	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C632	1-126-953-11	ELECT	2200 μ F	20%	35V	C913	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C634	1-126-941-11	ELECT	470 μ F	20%	25V	C914	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C635	1-126-971-11	ELECT	470 μ F	20%	50V	C915	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C637	1-107-882-91	ELECT	100 μ F	20%	16V	C916	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V
C638	1-107-882-91	ELECT	100 μ F	20%	16V						


NOTE: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.







REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES
C922	1-164-315-11	CERAMIC CHIP	470pF	5%	50V	D108	8-719-036-94	DIODE	RD5.6SB-T1
C925	1-164-315-11	CERAMIC CHIP	470pF	5%	50V	D109	8-719-036-94	DIODE	RD5.6SB-T1
C956	1-126-933-11	ELECT	100 μ F	20%	16V	D200	8-719-062-51	DIODE	1PS226-115
C967	1-164-505-11	CERAMIC CHIP	2.2 μ F		16V	D201	8-719-404-50	DIODE	MA111-TX
C980	1-126-965-91	ELECT	22 μ F	20%	50V	D202	8-719-404-50	DIODE	MA111-TX
C981	1-216-864-11	SHORT CHIP				D203	8-719-404-50	DIODE	MA111-TX
C983	1-216-864-11	SHORT CHIP				D204	8-719-404-50	DIODE	MA111-TX
C1019	1-125-891-11	CERAMIC CHIP	0.47 μ F	10%	10V	D205	8-719-404-50	DIODE	MA111-TX
C5001	1-107-957-11	ELECT	1 μ F	20%	250V	D208	8-719-404-50	DIODE	MA111-TX
C5073	1-106-375-12	MYLAR	0.022 μ F	5%	200V	D212	8-719-404-50	DIODE	MA111-TX
CONNECTOR						D213	8-719-404-50	DIODE	MA111-TX
* CN507	1-564-509-11	PLUG, CONNECTOR	6P			D214	8-719-404-50	DIODE	MA111-TX
* CN600	1-508-786-00	PIN, CONNECTOR (5MM PITCH)	2P			D218	8-719-991-33	DIODE	1SS133T-77
* CN601	1-691-134-11	PIN, CONNECTOR (PC BOARD)	2P			D219	8-719-991-33	DIODE	1SS133T-77
		(LATIN SOUTH MODELS ONLY)				D220	8-719-036-51	DIODE	MA4360-H(TA)
* CN602	1-573-963-11	PIN, CONNECTOR (PC BOARD)				D221	8-719-036-51	DIODE	MA4360-H(TA)
		(LATIN NORTH MODELS ONLY)				D222	8-719-080-57	DIODE	FSF05A20
* CN904	1-508-743-00	PIN, CONNECTOR 5P				D501	8-719-404-50	DIODE	MA111-TX
* CN2105	1-564-507-11	PLUG, CONNECTOR	4P			D504	8-719-074-25	DIODE	PG104R
* CN3102	1-564-510-11	PLUG, CONNECTOR	7P			D505	8-719-404-50	DIODE	MA111-TX
\triangle CN6101	1-580-843-11	PIN, CONNECTOR (POWER)				D506	8-719-404-50	DIODE	MA111-TX
* CN9201	1-564-508-11	PLUG, CONNECTOR	5P			D507	8-719-978-33	DIODE	DTZ-TT11-6.8B
DIODE						D508	8-719-404-50	DIODE	MA111-TX
D002	8-719-404-50	DIODE	MA111-TX			D509	8-719-422-97	DIODE	MA8091-M
D003	8-719-404-50	DIODE	MA111-TX			D511	8-719-404-50	DIODE	MA111-TX
D023	8-719-069-60	DIODE	UDZSTE-179.1B			D513	8-719-075-05	DIODE	FR104-A5
D024	8-719-069-60	DIODE	UDZSTE-179.1B			D517	6-501-299-01	DIODE	BY228GP
D025	8-719-069-60	DIODE	UDZSTE-179.1B			D518	8-719-312-10	DIODE	RU4AM-T3
D057	8-719-404-50	DIODE	MA111-TX			D521	8-719-085-57	DIODE	ER202
D058	8-719-404-50	DIODE	MA111-TX			D522	8-719-085-57	DIODE	ER202
D059	8-719-404-50	DIODE	MA111-TX			D523	8-719-074-25	DIODE	PG104R
D064	8-719-977-03	DIODE	DTZ5.6B			D527	8-719-075-05	DIODE	FR104-A5
D065	8-719-977-03	DIODE	DTZ5.6B			D528	8-719-075-05	DIODE	FR104-A5
D066	8-719-083-20	DIODE	PG102R			D529	8-719-991-33	DIODE	1SS133T-77
D068	8-719-977-03	DIODE	DTZ5.6B			D530	8-719-036-37	DIODE	MA4270-L(TA)
D074	8-719-991-33	DIODE	1SS133T-77			D536	8-719-404-50	DIODE	MA111-TX
D075	8-719-422-97	DIODE	MA8091-M			D537	8-719-404-50	DIODE	MA111-TX
D082	6-500-600-01	DIODE	MM3Z3V3T1			D548	8-719-991-33	DIODE	1SS133T-77
D083	6-500-600-01	DIODE	MM3Z3V3T1			D549	8-719-036-94	DIODE	RD5.6SB-T1
D084	6-500-600-01	DIODE	MM3Z3V3T1			D550	8-719-036-43	DIODE	MA4300-H(TA)
D103	8-719-036-43	DIODE	MA4300-H(TA)			D600	8-719-404-50	DIODE	MA111-TX
D105	8-719-404-50	DIODE	MA111-TX			D602	6-501-301-01	DIODE	1A5G
D106	6-500-600-01	DIODE	MM3Z3V3T1			D603	6-501-301-01	DIODE	1A5G
						D604	8-719-077-77	DIODE	D3SB60F3
						D606	8-719-109-97	DIODE	RD6.8ESB2



REF. NO.	PART NO.	DESCRIPTION	VALUES	REF. NO.	PART NO.	DESCRIPTION	VALUES
D614	8-719-036-41	DIODE (LATIN SOUTH MODELS ONLY)	MA4300-L(TA)	FB601	1-469-578-11	FERRITE	1.1μH
D615	6-500-175-01	DIODE (LATIN SOUTH MODELS ONLY)	1E3-TB	FB603	1-469-578-11	FERRITE	1.1μH
D617	6-500-175-01	DIODE	1E3-TB	FB605	1-469-578-11	FERRITE	1.1μH
D618	6-500-175-01	DIODE	1E3-TB	FB608	1-412-911-31	FERRITE	0μH
D619	6-500-175-01	DIODE	1E3-TB	FB610	1-469-578-11	FERRITE	1.1μH
D621	8-719-312-10	DIODE	RU4AM-T3	IC			
D622	6-500-175-01	DIODE	1E3-TB	IC001	T-998-609-85	IC	TDA12001H/N1F4B
D625	8-719-510-73	DIODE	S3L20μF4	IC003	6-710-021-01	IC	CAT24C16WI-GT3
D629	8-719-035-55	DIODE	MA4039-H(TA)	IC200	6-703-477-01	IC	AN5277T
D635	6-501-588-01	DIODE	MA8036-H-TX	IC502	8-759-700-07	IC	NJM2903M
D636	8-719-036-43	DIODE	MA4300-H(TA)	IC503	6-709-348-01	IC	LA78041-E
D637	8-719-072-70	DIODE	MA2ZD14001S0	IC601	6-709-448-01	IC (LATIN NORTH MODELS ONLY)	STR-W6735-LF2011
D638	8-719-404-50	DIODE	MA111-TX	IC601	6-709-487-01	IC (LATIN SOUTH MODELS ONLY)	STR-W6753-LF2011
D639	6-501-311-01	DIODE	SB360-S	IC602	6-706-789-01	IC	KIA78R09API
D642	8-719-422-97	DIODE	MA8091-M	IC603	6-703-478-01	IC	PQ018EF01SSH
D643	8-719-017-79	DIODE	MA8033	IC604	8-759-646-52	IC	KIA7805API
D645	8-719-057-76	DIODE	MA8150-M-TX	IC605	6-705-063-01	IC	SE135N-LF38
D646	8-719-057-76	DIODE	MA8150-M-TX	IC606	6-706-886-01	IC	KIA78D33PI
D647	8-719-017-79	DIODE	MA8033	IC607	8-759-832-05	IC	BA18BC0FP-E2
D648	8-719-422-97	DIODE	MA8091-M	JACK			
D649	8-719-057-76	DIODE	MA8150-M-TX	J900	1-694-242-11	TERMINAL, S	
D650	8-719-422-97	DIODE	MA8091-M	J901	1-817-299-22	PHONO JACK	11P
D651	8-719-422-97	DIODE	MA8091-M	CHIP CONDUCTOR			
D652	8-719-017-67	DIODE	MA8068-H	JR003	1-216-864-11	SHORT CHIP	
D653	8-719-017-67	DIODE	MA8068-H	JR007	1-216-864-11	SHORT CHIP	
D900	8-719-422-97	DIODE	MA8091-M	JR008	1-216-864-11	SHORT CHIP	
D908	8-719-977-03	DIODE	DTZ5.6B	JR009	1-216-864-11	SHORT CHIP	
D909	8-719-977-03	DIODE	DTZ5.6B	JR013	1-216-864-11	SHORT CHIP	
D910	8-719-977-03	DIODE	DTZ5.6B	JR014	1-216-864-11	SHORT CHIP	
DY CONNECTOR				JR016	1-216-864-11	SHORT CHIP	
* DY1	1-580-798-11	CONNECTOR PIN (DY)	6P	JR026	1-216-864-11	SHORT CHIP	
FERRITE BEAD				JR027	1-216-864-11	SHORT CHIP	
FB005	1-469-981-21	FERRITE	0μH	JR030	1-216-864-11	SHORT CHIP	
FB006	1-469-981-21	FERRITE	0μH	JR036	1-216-864-11	SHORT CHIP	
FB007	1-469-981-21	FERRITE	0μH	JR037	1-216-864-11	SHORT CHIP	
FB008	1-469-981-21	FERRITE	0μH	JR042	1-216-797-11	METAL CHIP	10 5% 1/10W
FB009	1-414-229-11	FERRITE	0μH	JR049	1-216-864-11	SHORT CHIP	
FB010	1-216-864-11	SHORT CHIP		JR051	1-216-864-11	SHORT CHIP	
FB011	1-414-234-22	FERRITE	0μH	JR052	1-216-864-11	SHORT CHIP	
FB201	1-469-578-11	FERRITE	1.1μH	JR071	1-216-864-11	SHORT CHIP	
FB503	1-469-579-11	FERRITE	0.45μH	JR072	1-216-864-11	SHORT CHIP	
FB504	1-469-578-11	FERRITE	1.1μH	JR099	1-216-864-11	SHORT CHIP	
				JR203	1-216-864-11	SHORT CHIP	

NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
JR204	1-216-864-11	SHORT CHIP				JR2110	1-216-864-11	SHORT CHIP			
JR205	1-216-864-11	SHORT CHIP				JR5001	1-216-864-11	SHORT CHIP			
JR301	1-216-864-11	SHORT CHIP				JR5035	1-216-864-11	SHORT CHIP			
JR302	1-216-864-11	SHORT CHIP									
JR303	1-216-864-11	SHORT CHIP						COIL			
						L003	1-414-856-11	INDUCTOR		10μH	
JR304	1-216-864-11	SHORT CHIP				L004	1-414-187-11	INDUCTOR		47μH	
JR305	1-216-864-11	SHORT CHIP				L005	1-414-856-11	INDUCTOR		10μH	
JR306	1-216-864-11	SHORT CHIP				L006	1-414-856-11	INDUCTOR		10μH	
JR501	1-216-864-11	SHORT CHIP				L007	1-414-856-11	INDUCTOR		10μH	
JR502	1-216-864-11	SHORT CHIP									
						L008	1-414-856-11	INDUCTOR		10μH	
JR503	1-216-864-11	SHORT CHIP				L009	1-414-934-21	INDUCTOR		10μH	
JR504	1-216-864-11	SHORT CHIP				L010	1-414-934-21	INDUCTOR		10μH	
JR506	1-216-864-11	SHORT CHIP				L011	1-414-934-21	INDUCTOR		10μH	
JR509	1-216-864-11	SHORT CHIP				L012	1-414-934-21	INDUCTOR		10μH	
JR511	1-216-864-11	SHORT CHIP									
						L013	1-414-934-21	INDUCTOR		10μH	
JR512	1-216-864-11	SHORT CHIP				L031	1-414-856-11	INDUCTOR		10μH	
JR513	1-216-864-11	SHORT CHIP				L032	1-414-856-11	INDUCTOR		10μH	
JR522	1-216-864-11	SHORT CHIP				L033	1-414-934-21	INDUCTOR		10μH	
JR601	1-216-864-11	SHORT CHIP				L035	1-414-856-11	INDUCTOR		10μH	
JR602	1-216-864-11	SHORT CHIP									
						L036	1-414-934-21	INDUCTOR		10μH	
JR650	1-216-864-11	SHORT CHIP				L100	1-414-857-11	INDUCTOR		100μH	
JR651	1-216-864-11	SHORT CHIP				L101	1-414-138-11	INDUCTOR		0.33μH	
JR652	1-216-864-11	SHORT CHIP				L106	1-414-189-31	INDUCTOR		100μH	
JR653	1-216-864-11	SHORT CHIP				L201	1-412-519-11	INDUCTOR		3.3μH	
JR654	1-216-864-11	SHORT CHIP									
						L507	1-419-633-21	INDUCTOR		10MH	
JR655	1-216-864-11	SHORT CHIP				L512	1-406-666-21	INDUCTOR		150μH	
JR666	1-216-864-11	SHORT CHIP				L513	1-412-552-11	INDUCTOR		2.2MH	
JR667	1-216-864-11	SHORT CHIP				L514	1-408-947-00	INDUCTOR		2.2MH	
JR668	1-216-864-11	SHORT CHIP				L515	1-406-677-11	INDUCTOR		10MH	
JR800	1-216-864-11	SHORT CHIP									
						L600	1-412-529-11	INDUCTOR		22μH	
JR801	1-216-864-11	SHORT CHIP				L601	1-412-533-21	INDUCTOR		47μH	
JR805	1-216-864-11	SHORT CHIP				L602	1-412-529-11	INDUCTOR		22μH	
JR901	1-216-864-11	SHORT CHIP				L902	1-414-187-11	INDUCTOR		47μH	
JR902	1-216-864-11	SHORT CHIP				L2601	1-406-659-11	INDUCTOR		10μH	
JR1006	1-216-864-11	SHORT CHIP									
								PHOTO COUPLER			
JR1011	1-216-864-11	SHORT CHIP					PH600	8-749-019-60	IC		K1010HB01
JR1012	1-216-864-11	SHORT CHIP									
JR1050	1-216-811-11	METAL CHIP	150	5%	1/10W						
JR1100	1-216-864-11	SHORT CHIP									
JR1101	1-216-864-11	SHORT CHIP						IC LINK			
							PS201	1-533-597-41	IC LINK	5A	90V
JR1110	1-216-864-11	SHORT CHIP					PS602	1-533-597-41	IC LINK	5A	90V
JR1111	1-216-864-11	SHORT CHIP					PS603	1-533-597-41	IC LINK	5A	90V
JR1903	1-216-864-11	SHORT CHIP					PS604	1-533-597-41	IC LINK	5A	90V
JR2108	1-216-864-11	SHORT CHIP					PS605	1-533-597-41	IC LINK	5A	90V
JR2109	1-216-864-11	SHORT CHIP									



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
TRANSISTOR						R029	1-216-809-11	METAL CHIP	100	5%	1/10W
Q001	8-729-038-67	TRANSISTOR	KRC102S			R030	1-216-809-11	METAL CHIP	100	5%	1/10W
Q010	8-729-600-22	TRANSISTOR	2SA1235-F			R038	1-216-809-11	METAL CHIP	100	5%	1/10W
Q016	8-729-038-67	TRANSISTOR	KRC102S			R039	1-216-809-11	METAL CHIP	100	5%	1/10W
Q018	8-729-038-67	TRANSISTOR	KRC102S			R041	1-216-809-11	METAL CHIP	100	5%	1/10W
Q100	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R042	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
Q102	8-729-022-54	TRANSISTOR	2SC3779C,D-AA			R044	1-216-834-11	METAL CHIP	12K	5%	1/10W
Q111	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R045	1-216-809-11	METAL CHIP	100	5%	1/10W
Q200	8-729-038-67	TRANSISTOR	KRC102S			R046	1-216-809-11	METAL CHIP	100	5%	1/10W
Q201	8-729-600-22	TRANSISTOR	2SA1235-F			R048	1-216-809-11	METAL CHIP	100	5%	1/10W
Q202	8-729-600-22	TRANSISTOR	2SA1235-F			R051	1-218-885-11	METAL CHIP	39K	0.50%	1/10W
Q206	8-729-038-67	TRANSISTOR	KRC102S			R056	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
Q501	6-550-362-01	TRANSISTOR	KTA1279			R058	1-216-864-11	SHORT CHIP			
Q502	8-729-140-50	TRANSISTOR	2SC3209LK			R059	1-216-821-11	METAL CHIP	1K	5%	1/10W
Q503	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R060	1-216-809-11	METAL CHIP	100	5%	1/10W
Q505	6-551-406-01	TRANSISTOR	IRFS614BYDTU			R061	1-216-819-11	METAL CHIP	680	5%	1/10W
Q506	6-551-129-01	TRANSISTOR	2SK3462			R088	1-216-816-11	METAL CHIP	390	5%	1/10W
Q511	6-550-845-01	TRANSISTOR	TT2142			R096	1-216-813-11	METAL CHIP	220	5%	1/10W
Q512	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R097	1-216-813-11	METAL CHIP	220	5%	1/10W
Q513	8-729-600-22	TRANSISTOR	2SA1235-F			R099	1-216-813-11	METAL CHIP	220	5%	1/10W
Q515	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R100	1-216-821-11	METAL CHIP	1K	5%	1/10W
Q516	6-550-362-01	TRANSISTOR	KTA1279			R103	1-211-981-11	METAL CHIP	33	0.50%	1/10W
Q601	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R106	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
Q608	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R107	1-216-826-11	METAL CHIP	2.7K	5%	1/10W
Q609	8-729-120-28	TRANSISTOR	2SC1623-L5L6			R108	1-216-820-11	METAL CHIP	820	5%	1/10W
Q900	8-729-600-22	TRANSISTOR	2SA1235-F			R109	1-216-021-00	RES-CHIP	68	5%	1/10W
Q901	8-729-027-56	TRANSISTOR	DTC143TKA-T146			R115	1-216-809-11	METAL CHIP	100	5%	1/10W
Q902	8-729-027-56	TRANSISTOR	DTC143TKA-T146			R116	1-216-809-11	METAL CHIP	100	5%	1/10W
RESISTOR						R118	1-216-809-11	METAL CHIP	100	5%	1/10W
R001	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R119	1-211-981-11	METAL CHIP	33	0.50%	1/10W
R002	1-216-809-11	METAL CHIP	100	5%	1/10W	R121	1-215-925-11	METAL OXIDE	22K	5%	3W
R003	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R128	1-216-864-11	SHORT CHIP			
R004	1-216-809-11	METAL CHIP	100	5%	1/10W	R146	1-216-821-11	METAL CHIP	1K	5%	1/10W
R010	1-216-833-11	METAL CHIP	10K	5%	1/10W	R147	1-216-813-11	METAL CHIP	220	5%	1/10W
R011	1-216-817-11	METAL CHIP	470	5%	1/10W	R148	1-211-969-11	METAL CHIP	10	0.50%	1/10W
R012	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R149	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R014	1-216-809-11	METAL CHIP	100	5%	1/10W	R150	1-216-809-11	METAL CHIP	100	5%	1/10W
R015	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R152	1-216-811-11	METAL CHIP	150	5%	1/10W
R020	1-216-809-11	METAL CHIP	100	5%	1/10W	R153	1-218-839-11	METAL CHIP	470	0.50%	1/10W
R022	1-216-809-11	METAL CHIP	100	5%	1/10W	R156	1-216-864-11	SHORT CHIP			
R023	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R200	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R024	1-216-809-11	METAL CHIP	100	5%	1/10W	R201	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R025	1-216-809-11	METAL CHIP	100	5%	1/10W	R202	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R026	1-216-809-11	METAL CHIP	100	5%	1/10W	R203	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
						R204	1-216-827-11	METAL CHIP	3.3K	5%	1/10W



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
R205	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W	R389	1-218-285-11	METAL CHIP	75	5%	1/10W
R206	1-216-809-11	METAL CHIP	100	5%	1/10W	R393	1-216-809-11	METAL CHIP	100	5%	1/10W
R207	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W	R394	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R208	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W	R395	1-216-845-11	METAL CHIP	100K	5%	1/10W
R210	1-216-835-11	METAL CHIP	15K	5%	1/10W	R399	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R211	1-216-835-11	METAL CHIP	15K	5%	1/10W	R500	1-216-821-11	METAL CHIP	1K	5%	1/10W
R212	1-216-809-11	METAL CHIP	100	5%	1/10W	R501	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R213	1-216-835-11	METAL CHIP	15K	5%	1/10W	R502	1-260-127-11	CARBON	220K	5%	1/2W
R214	1-216-835-11	METAL CHIP	15K	5%	1/10W	R503	1-216-841-11	METAL CHIP	47K	5%	1/10W
R215	1-216-833-11	METAL CHIP	10K	5%	1/10W	R504	1-216-841-11	METAL CHIP	47K	5%	1/10W
R216	1-216-833-11	METAL CHIP	10K	5%	1/10W	R505	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R220	1-216-864-11	SHORT CHIP				R506	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R221	1-216-809-11	METAL CHIP	100	5%	1/10W	R510	1-243-527-71	METAL OXIDE	47	5%	3W
R234	1-249-401-11	CARBON	47	5%	1/4W	R513	1-216-849-11	METAL CHIP	220K	5%	1/10W
R235	1-249-401-11	CARBON	47	5%	1/4W	R514	1-216-841-11	METAL CHIP	47K	5%	1/10W
R236	1-216-827-11	METAL CHIP	3.3K	5%	1/10W	R515	1-216-853-11	METAL CHIP	470K	5%	1/10W
R237	1-216-809-11	METAL CHIP	100	5%	1/10W	R518	1-216-838-11	METAL CHIP	27K	5%	1/10W
R238	1-216-809-11	METAL CHIP	100	5%	1/10W	R519	1-216-841-11	METAL CHIP	47K	5%	1/10W
R241	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R520	1-218-869-11	METAL CHIP	8.2K	0.50%	1/10W
R242	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R521	1-216-841-11	METAL CHIP	47K	5%	1/10W
R306	1-218-873-11	METAL CHIP	12K	0.50%	1/10W	R522	1-249-428-11	CARBON	8.2K	5%	1/4W
R314	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R523	1-216-839-11	METAL CHIP	33K	5%	1/10W
R315	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R524	1-218-887-11	METAL CHIP	47K	0.50%	1/10W
R316	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W	R525	1-245-476-21	METAL	390K	1%	1/4W
R317	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R526	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W
R320	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W	R529	1-218-875-11	METAL CHIP	15K	0.50%	1/10W
R323	1-216-809-11	METAL CHIP	100	5%	1/10W	R530	1-218-879-11	METAL CHIP	22K	0.50%	1/10W
R324	1-216-864-11	SHORT CHIP				R531	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R336	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R532	1-216-857-11	METAL CHIP	1M	5%	1/10W
R337	1-216-817-11	METAL CHIP	470	5%	1/10W	R533	1-216-846-11	METAL CHIP	120K	5%	1/10W
R338	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R535	1-216-809-11	METAL CHIP	100	5%	1/10W
R339	1-216-809-11	METAL CHIP	100	5%	1/10W	R536	1-218-879-11	METAL CHIP	22K	0.50%	1/10W
R340	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R537	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R341	1-216-809-11	METAL CHIP	100	5%	1/10W	R538	1-215-451-00	METAL	18K	1%	1/4W
R355	1-216-837-11	METAL CHIP	22K	5%	1/10W	R542	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R356	1-218-851-11	METAL CHIP	1.5K	0.50%	1/10W	R543	1-216-437-00	METAL OXIDE	5.6K	5%	1W
R364	1-216-817-11	METAL CHIP	470	5%	1/10W	R544	1-218-891-11	METAL CHIP	68K	0.50%	1/10W
R377	1-216-823-11	METAL CHIP	1.5K	5%	1/10W	R547	1-243-571-71	METAL OXIDE	390	5%	2W
R379	1-216-843-11	METAL CHIP	68K	5%	1/10W	R548	1-215-915-21	METAL OXIDE	470	5%	3W
R380	1-216-809-11	METAL CHIP	100	5%	1/10W	R551	1-215-445-00	METAL	10K	1%	1/4W
R384	1-216-809-11	METAL CHIP	100	5%	1/10W	R553	1-218-845-11	METAL CHIP	820	0.50%	1/10W
R385	1-216-809-11	METAL CHIP	100	5%	1/10W	R554	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R386	1-216-809-11	METAL CHIP	100	5%	1/10W	R555	1-215-873-00	METAL OXIDE	4.7K	5%	1W
R387	1-218-285-11	METAL CHIP	75	5%	1/10W	R556	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R388	1-218-285-11	METAL CHIP	75	5%	1/10W	R560	1-216-825-11	METAL CHIP	2.2K	5%	1/10W

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REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
R562	1-243-683-71	METAL OXIDE	47	5%	1W	R647	1-216-821-11	METAL CHIP	1K	5%	1/10W
R568	1-249-383-11	CARBON	1.5	5%	1/4W		(LATIN NORTH MODELS ONLY)				
R571	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W	R647	1-216-813-11	METAL CHIP	220	5%	1/10W
R577	1-243-565-71	METAL OXIDE	120	5%	2W		(LATIN SOUTH MODELS ONLY)				
R578	1-243-809-71	METAL OXIDE	1	5%	1W						
						⚠ R650	1-247-289-00	METAL	8.2M	5%	1W
R579	1-215-916-71	METAL OXIDE	680	5%	3W	R651	1-243-598-71	METAL OXIDE	68K	5%	2W
R580	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W		(LATIN NORTH MODELS ONLY)				
R582	1-216-858-11	METAL CHIP	1.2M	5%	1/10W	R651	1-245-504-71	METAL OXIDE	100K	5%	2W
R585	1-243-544-71	METAL OXIDE	2.2	5%	2W		(LATIN SOUTH MODELS ONLY)				
R596	1-215-916-71	METAL OXIDE	680	5%	3W	R655	1-216-809-11	METAL CHIP	100	5%	1/10W
						R656	1-249-381-11	CARBON	1	5%	1/4W
R597	1-243-576-71	METAL OXIDE	1K	5%	2W	R667	1-216-821-11	METAL CHIP	1K	5%	1/10W
R599	1-216-838-11	METAL CHIP	27K	5%	1/10W						
R602	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R668	1-216-839-11	METAL CHIP	33K	5%	1/10W
R603	1-216-821-11	METAL CHIP	1K	5%	1/10W	R680	1-216-864-11	SHORT CHIP			
R604	1-216-864-11	SHORT CHIP				R902	1-216-821-11	METAL CHIP	1K	5%	1/10W
						R904	1-216-821-11	METAL CHIP	1K	5%	1/10W
R605	1-242-949-11	FUSIBLE	0.1	10%	1W	R905	1-216-840-11	METAL CHIP	39K	5%	1/10W
R606	1-245-504-71	METAL OXIDE	100K	5%	2W						
	(LATIN SOUTH MODELS ONLY)					R906	1-216-817-11	METAL CHIP	470	5%	1/10W
R607	1-240-262-11	METAL	0.68	5%	10W	R907	1-216-840-11	METAL CHIP	39K	5%	1/10W
	(LATIN NORTH MODELS ONLY)					R908	1-216-840-11	METAL CHIP	39K	5%	1/10W
R607	1-205-997-31	METAL	2.2	5%	10W	R909	1-216-840-11	METAL CHIP	39K	5%	1/10W
	(LATIN SOUTH MODELS ONLY)					R910	1-216-817-11	METAL CHIP	470	5%	1/10W
R608	1-216-864-11	SHORT CHIP									
	(LATIN NORTH MODELS ONLY)					R911	1-216-864-11	SHORT CHIP			
R608	1-216-813-11	METAL CHIP	220	5%	1/10W	R913	1-216-853-11	METAL CHIP	470K	5%	1/10W
	(LATIN SOUTH MODELS ONLY)					R914	1-216-853-11	METAL CHIP	470K	5%	1/10W
R609	1-216-833-11	METAL CHIP	10K	5%	1/10W	R915	1-216-849-11	METAL CHIP	220K	5%	1/10W
R610	1-216-362-21	METAL OXIDE	0.27	5%	2W	R916	1-216-849-11	METAL CHIP	220K	5%	1/10W
R616	1-240-262-11	METAL	0.68	5%	10W	R919	1-216-809-11	METAL CHIP	100	5%	1/10W
	(LATIN NORTH MODELS ONLY)					R920	1-216-849-11	METAL CHIP	220K	5%	1/10W
R616	1-205-997-31	METAL	2.2	5%	10W	R921	1-216-849-11	METAL CHIP	220K	5%	1/10W
	(LATIN SOUTH MODELS ONLY)					R923	1-218-285-11	METAL CHIP	75	5%	1/10W
R619	1-243-953-71	METAL OXIDE	0.22	5%	3W	R924	1-216-853-11	METAL CHIP	470K	5%	1/10W
R621	1-247-807-31	CARBON	100	5%	1/4W						
R623	1-218-883-11	METAL CHIP	33K	0.50%	1/10W	R925	1-216-864-11	SHORT CHIP			
	(LATIN SOUTH MODELS ONLY)					R926	1-216-864-11	SHORT CHIP			
						R927	1-216-864-11	SHORT CHIP			
R624	1-215-421-00	METAL	1K	1%	1/4W	R931	1-216-811-11	METAL CHIP	150	5%	1/10W
R627	1-249-393-11	CARBON	10	5%	1/4W	R932	1-216-864-11	SHORT CHIP			
	(LATIN NORTH MODELS ONLY)										
R627	1-249-403-11	CARBON	68	5%	1/4W	R933	1-216-864-11	SHORT CHIP			
	(LATIN SOUTH MODELS ONLY)					R939	1-216-810-11	METAL CHIP	120	5%	1/10W
						R944	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R631	1-249-425-11	CARBON	4.7K	5%	1/4W	R989	1-216-833-11	METAL CHIP	10K	5%	1/10W
R634	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R990	1-216-864-11	SHORT CHIP			
R635	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R636	1-247-843-11	CARBON	3.3K	5%	1/4W	R2151	1-243-692-71	METAL OXIDE	220	5%	1W
						R2152	1-243-692-71	METAL OXIDE	220	5%	1W
						R2646	1-249-381-11	CARBON	1	5%	1/4W
						R2647	1-249-429-11	CARBON	10K	5%	1/4W
						R5000	1-216-837-11	METAL CHIP	22K	5%	1/10W

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REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
R5001	1-216-841-11	METAL CHIP	47K	5%	1/10W	SWITCH					
R5002	1-216-833-11	METAL CHIP	10K	5%	1/10W	S502	1-572-707-11	SWITCH, LEVER			
R5003	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	SWF102	1-813-391-11	FILTER, SURFACE WAVE (41.25MHZ)			
R5005	1-216-809-11	METAL CHIP	100	5%	1/10W	SWF104	1-795-929-12	SAW FILTER			
R5006	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	TRANSFORMER					
R5008	1-216-845-11	METAL CHIP	100K	5%	1/10W	△ T501	1-437-195-51	TRANSFORMER, HORIZONTAL DRIVE			
R5009	1-216-853-11	METAL CHIP	470K	5%	1/10W	△ T503	1-453-479-41	FBT ASSEMBLY NX-4910//M			
R5010	1-216-833-11	METAL CHIP	10K	5%	1/10W	T504	1-433-850-21	TRANSFORMER, HORIZONTAL LINEAR			
R5011	1-216-828-11	METAL CHIP	3.9K	5%	1/10W	T508	1-437-610-11	TRANSFORMER, FERRITE (PMT)			
R5012	1-216-835-11	METAL CHIP	15K	5%	1/10W	THERMISTOR					
R5013	1-216-857-11	METAL CHIP	1M	5%	1/10W	△ T602	1-443-955-11	CONVERTER TRANSFORMER (SRT)			
R5014	1-216-859-11	METAL CHIP	1.5M	5%	1/10W			(LATIN NORTH MODELS ONLY)			
R5015	1-208-830-11	METAL CHIP	100K	0.50%	1/10W	△ T602	1-443-979-11	CONVERTER TRANSFORMER (SRT)			
R5020	1-243-957-71	METAL OXIDE	0.47	5%	3W			(LATIN SOUTH MODELS ONLY)			
R5021	1-218-843-11	METAL CHIP	680	0.50%	1/10W	△ T603	1-431-182-11	TRANSFORMER, LINE FILTER			
R5022	1-245-470-21	METAL	220K	1%	1/4W	POST PIN					
R5023	1-245-470-21	METAL	220K	1%	1/4W	TP02	1-536-354-00	POST PIN			
R5024	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W	TP03	1-536-354-00	POST PIN			
R5025	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	TP04	1-536-354-00	POST PIN			
R5026	1-245-470-21	METAL	220K	1%	1/4W	TP601	1-536-354-00	POST PIN			
R5027	1-245-466-21	METAL	150K	1%	1/4W	TP602	1-536-354-00	POST PIN			
R5032	1-215-916-71	METAL OXIDE	680	5%	3W	TUNER					
R5034	1-216-857-11	METAL CHIP	1M	5%	1/10W	TU101	1-693-729-11	TUNER			
R5035	1-216-821-11	METAL CHIP	1K	5%	1/10W	CRYSTAL					
R5036	1-218-839-11	METAL CHIP	470	0.50%	1/10W	X001	1-813-311-21	QUARTS CRYSTAL UNIT			
R5037	1-249-377-11	CARBON	0.47	5%	1/4W	CV					
R5038	1-249-377-11	CARBON	0.47	5%	1/4W	A-1223-262-A CV (VAR) BOARD, MOUNTED					
R5039	1-249-377-11	CARBON	0.47	5%	1/4W			4-382-854-01	SCREW (M3X8), P, SW (+)		
R9017	1-216-809-11	METAL CHIP	100	5%	1/10W	CAPACITOR					
R9018	1-127-715-91	CERAMIC CHIP	0.22μF	10%	16V	C704	1-126-933-11	ELECT	100μF	20%	16V
R9019	1-216-809-11	METAL CHIP	100	5%	1/10W	C710	1-162-117-00	CERAMIC	100pF	10%	500V
R9020	1-216-809-11	METAL CHIP	100	5%	1/10W	C711	1-161-830-00	CERAMIC	0.0047μF		500V
R9021	1-216-809-11	METAL CHIP	100	5%	1/10W	C712	1-137-374-11	MYLAR	0.047μF	5%	50V
R9022	1-216-809-11	METAL CHIP	100	5%	1/10W	C713	1-107-645-11	ELECT	22μF	20%	200V
R9023	1-216-809-11	METAL CHIP	100	5%	1/10W						
R9025	1-216-809-11	METAL CHIP	100	5%	1/10W						
R9026	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R9027	1-216-833-11	METAL CHIP	10K	5%	1/10W						
R9028	1-216-809-11	METAL CHIP	100	5%	1/10W						
R9030	1-216-809-11	METAL CHIP	100	5%	1/10W						
R9031	1-216-809-11	METAL CHIP	100	5%	1/10W						
R9036	1-216-809-11	METAL CHIP	100	5%	1/10W						
R9062	1-218-285-11	METAL CHIP	75	5%	1/10W						
RELAY											
△ RY600	1-755-198-11	RELAY, AC POWER									

NOTE: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.



REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES			
C714	1-107-648-91	ELECT	100μF	20%	200V	IC	IC751	6-709-352-01	IC	TDA6108AJF/N2		
C718	1-106-383-00	MYLAR	0.047μF	10%	200V							
C719	1-107-636-11	ELECT	10μF	20%	160V							
C720	1-104-999-11	MYLAR	0.1μF	5%	200V							
C722	1-126-933-11	ELECT	100μF	20%	16V							
C723	1-137-374-11	MYLAR	0.047μF	5%	50V	JACK	△ J751	1-451-544-11	SOCKET, CRT			
C725	1-126-935-11	ELECT	470μF	20%	16V							
C751	1-107-652-11	ELECT	10μF	20%	250V							
C752	1-115-350-51	CERAMIC	0.0047μF		2KV							
C753	1-137-528-11	MYLAR	0.1μF	10%	250V							
C754	1-107-649-11	ELECT	2.2μF	20%	250V	COIL	L711	1-412-537-31	INDUCTOR	100μH		
C756	1-126-965-91	ELECT	22μF	20%	50V							
C783	1-102-074-00	CERAMIC	0.001μF	10%	50V							
C786	1-115-350-51	CERAMIC	0.0047μF		2KV							
C788	1-162-925-11	CERAMIC CHIP	68pF	5%	50V							
C789	1-162-925-11	CERAMIC CHIP	68pF	5%	50V	L712	1-414-187-11	INDUCTOR	47μH			
C790	1-162-925-11	CERAMIC CHIP	68pF	5%	50V							
C1800	1-107-698-11	ELECT	10μF	20%	25V							
C1801	1-107-826-11	CERAMIC CHIP	0.1μF	10%	16V							
C1802	1-126-947-11	ELECT	47μF	20%	35V							
C1803	1-136-497-81	FILM	0.1μF	5%	50V	L750	1-414-856-11	INDUCTOR	10μH			
C1804	1-126-964-11	ELECT	10μF	20%	50V							
C1805	1-126-965-91	ELECT	22μF	20%	50V							
C1809	1-126-947-11	ELECT	47μF	20%	35V							
CONNECTOR										L751	1-412-539-11	INDUCTOR
* CN701	1-564-510-11	PLUG, CONNECTOR	7P									
CN702	1-695-915-11	TAB (CONTACT)										
CN703	1-691-765-11	PLUG (MICRO CONNECTOR)	3P									
CN704	1-695-915-11	TAB (CONTACT)										
CN705	1-695-915-11	TAB (CONTACT)				L752	1-414-187-11	INDUCTOR	47μH			
* CN711	1-564-507-11	PLUG, CONNECTOR	4P									
* CN712	1-564-506-11	PLUG, CONNECTOR	3P									
* CN1801	1-564-509-11	PLUG, CONNECTOR	6P									
* CN1802	1-564-506-11	PLUG, CONNECTOR	3P									
DIODE						TRANSISTOR	Q712	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
D750	8-719-083-20	DIODE	PG102R									
D754	8-719-970-83	DIODE	HSS82-TJ									
D755	8-719-970-83	DIODE	HSS82-TJ									
D756	8-719-970-83	DIODE	HSS82-TJ									
D782	8-719-034-42	DIODE	MA4056-M(QZ)			Q713	6-550-247-01	TRANSISTOR	KTA1659A			
D788	8-719-404-50	DIODE	MA111-TX									
D1803	8-719-404-50	DIODE	MA111-TX									
D1804	8-719-404-50	DIODE	MA111-TX									
D1805	8-719-404-50	DIODE	MA111-TX									
						Q715	8-729-053-87	TRANSISTOR	KTC4370A			
						Q717	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
						Q718	8-729-600-22	TRANSISTOR	2SA1235-F			
						Q719	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
						Q1800	8-729-600-22	TRANSISTOR	2SA1235-F			
						Q1802	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
						Q1804	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
						RESISTOR	R712	1-216-805-11	METAL CHIP	47	5%	1/10W
						R714	1-260-312-11	CARBON	47	5%	1/2W	
						R715	1-249-413-11	CARBON	470	5%	1/4W	
						R722	1-249-437-11	CARBON	47K	5%	1/4W	
						R724	1-215-888-00	METAL OXIDE	220	5%	2W	
						R725	1-249-417-11	CARBON	1K	5%	1/4W	
						R726	1-249-437-11	CARBON	47K	5%	1/4W	
						R727	1-216-833-11	METAL CHIP	10K	5%	1/10W	
						R728	1-216-809-11	METAL CHIP	100	5%	1/10W	
						R729	1-249-413-11	CARBON	470	5%	1/4W	
						R730	1-216-809-11	METAL CHIP	100	5%	1/10W	
						R731	1-216-826-11	METAL CHIP	2.7K	5%	1/10W	
						R732	1-249-385-11	CARBON	2.2	5%	1/4W	
						R735	1-249-401-11	CARBON	47	5%	1/4W	
						R736	1-247-791-91	CARBON	22	5%	1/4W	

NOTE: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.

CV **H2**

REF. NO.	PART NO.	DESCRIPTION	VALUES			REF. NO.	PART NO.	DESCRIPTION	VALUES		
R737	1-249-385-11	CARBON	2.2	5%	1/4W	SPARK GAP					
R752	1-249-415-11	CARBON	680	5%	1/4W	SG701	1-519-421-11	GAP, DISCHARGE			
R753	1-249-415-11	CARBON	680	5%	1/4W	H2					
R754	1-249-411-11	CARBON	330	5%	1/4W	A-1223-257-A H2 (VAR) BOARD, MOUNTED					
R756	1-219-746-11	METAL	1K	5%	1/2W	LED HOLDER					
R757	1-219-746-11	METAL	1K	5%	1/2W	* A4106	4-055-304-01	HOLDER, LED			
R758	1-219-746-11	METAL	1K	5%	1/2W	CAPACITOR					
R760	1-260-123-11	CARBON	100K	5%	1/2W	C4103	1-126-947-11	ELECT	47µF	20%	35V
R763	1-260-087-11	CARBON	100	5%	1/2W	C4104	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
R764	1-260-087-11	CARBON	100	5%	1/2W	C4105	1-164-346-11	CERAMIC CHIP	1µF		16V
R765	1-260-087-11	CARBON	100	5%	1/2W	C4106	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
R773	1-260-135-11	CARBON	1M	5%	1/2W	C4107	1-164-346-11	CERAMIC CHIP	1µF		16V
R781	1-243-951-71	METAL OXIDE	0.68	5%	2W	C4108	1-126-925-91	ELECT	470µF	20%	10V
R782	1-216-821-11	METAL CHIP	1K	5%	1/10W	C4109	1-126-947-11	ELECT	47µF	20%	35V
R788	1-216-821-11	METAL CHIP	1K	5%	1/10W	△ C4111	1-119-895-51	CERAMIC	4700pF	20%	250V
R789	1-216-821-11	METAL CHIP	1K	5%	1/10W	C4116	1-126-965-91	ELECT	22µF	20%	50V
R790	1-216-814-11	METAL CHIP	270	5%	1/10W	C4117	1-126-965-91	ELECT	22µF	20%	50V
R791	1-216-807-11	METAL CHIP	68	5%	1/10W	△ C4602	1-165-533-31	MYLAR	0.68µF	10	0V
R792	1-216-819-11	METAL CHIP	680	5%	1/10W	CONNECTOR					
R793	1-216-807-11	METAL CHIP	68	5%	1/10W	△ CN4101	1-580-843-11	PIN, CONNECTOR (POWER)			
R794	1-249-381-11	CARBON	1	5%	1/4W	△ CN4102	1-580-843-11	PIN, CONNECTOR (POWER)			
R798	1-249-397-11	CARBON	22	5%	1/4W	* CN4105	1-564-508-11	PLUG, CONNECTOR	5P		
R1800	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	* CN4106	1-564-507-11	PLUG, CONNECTOR	4P		
R1801	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W	* CN4110	1-564-507-11	PLUG, CONNECTOR	4P		
R1802	1-218-829-11	METAL CHIP	180	0.50%	1/10W	CN4111	1-695-915-11	TAB (CONTACT)			
R1803	1-218-879-11	METAL CHIP	22K	0.50%	1/10W	* CN4113	1-564-510-11	PLUG, CONNECTOR	7P		
R1804	1-218-847-11	METAL CHIP	1K	0.50%	1/10W	DIODE					
R1805	1-218-871-11	METAL CHIP	10K	0.50%	1/10W	D4103	8-719-977-03	DIODE	DTZ5.6B		
R1806	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	D4104	8-719-977-03	DIODE	DTZ5.6B		
R1807	1-216-864-11	SHORT CHIP				D4105	8-719-977-03	DIODE	DTZ5.6B		
R1808	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W	D4106	8-719-083-18	DIODE	SPB-25MVWF		
R1809	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W	D4107	8-719-977-03	DIODE	DTZ5.6B		
R1810	1-243-696-71	METAL OXIDE	470	5%	1W	D4108	8-719-404-50	DIODE	MA111-TX		
R1811	1-249-391-11	CARBON	6.8	5%	1/4W	D4109	8-719-977-03	DIODE	DTZ5.6B		
R1812	1-249-383-11	CARBON	1.5	5%	1/4W	D4110	8-719-991-33	DIODE	1SS133T-77		
R1813	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	D4111	8-719-991-33	DIODE	1SS133T-77		
R1814	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	D4115	8-719-977-03	DIODE	DTZ5.6B		
R1815	1-216-849-11	METAL CHIP	220K	5%	1/10W	FUSE					
R1816	1-218-847-11	METAL CHIP	1K	0.50%	1/10W	△ F4101	1-576-334-41	FUSE	5A	250V	
R1817	1-249-381-11	CARBON	1	5%	1/4W						
R1830	1-218-847-11	METAL CHIP	1K	0.50%	1/10W						
R1831	1-216-829-11	METAL CHIP	4.7K	5%	1/10W						
VARIABLE RESISTOR											
△ RV750	1-241-656-21	RES, ADJ, METAL FILM	110M								
RV1800	1-238-019-11	RES, ADJ, METAL FILM	47K								

FUSE HOLDER						
⚠	FH4101	1-533-223-11	FUSE HOLDER	0A	0V	
⚠	FH4102	1-533-223-11	FUSE HOLDER	0A	0V	
IC						
	IC4101	6-704-532-01	IC	RPM7240-H5		
JACK						
	J4102	1-770-329-13	JACK, PIN	3P		
	J4103	1-770-786-31	JACK			
TRANSISTOR						
	Q4101	8-729-027-56	TRANSISTOR	DTC143TKA-T146		
	Q4102	8-729-027-56	TRANSISTOR	DTC143TKA-T146		
RESISTOR						
	R4103	1-218-285-11	METAL CHIP	75	5%	1/10W
	R4104	1-216-849-11	METAL CHIP	220K	5%	1/10W
	R4105	1-216-838-11	METAL CHIP	27K	5%	1/10W
	R4106	1-216-849-11	METAL CHIP	220K	5%	1/10W
	R4107	1-216-838-11	METAL CHIP	27K	5%	1/10W
	R4108	1-216-813-11	METAL CHIP	220	5%	1/10W
	R4109	1-216-813-11	METAL CHIP	220	5%	1/10W
	R4110	1-216-797-11	METAL CHIP	10	5%	1/10W
	R4111	1-216-809-11	METAL CHIP	100	5%	1/10W
	R4112	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
	R4113	1-216-821-11	METAL CHIP	1K	5%	1/10W
	R4114	1-216-819-11	METAL CHIP	680	5%	1/10W
	R4115	1-216-817-11	METAL CHIP	470	5%	1/10W
	R4116	1-216-815-11	METAL CHIP	330	5%	1/10W
	R4117	1-216-813-11	METAL CHIP	220	5%	1/10W
	R4118	1-216-811-11	METAL CHIP	150	5%	1/10W
	R4120	1-249-411-11	CARBON	330	5%	1/4W
	R4121	1-249-411-11	CARBON	330	5%	1/4W
⚠	R4122	1-243-994-91	METAL	820K	5%	0.5W
	R4123	1-249-393-11	CARBON	10	5%	1/4W

<u>SWITCH</u>		
S4102	1-692-431-21	SWITCH, TACTILE
S4103	1-692-431-21	SWITCH, TACTILE
S4104	1-692-431-21	SWITCH, TACTILE
S4105	1-692-431-21	SWITCH, TACTILE
S4106	1-692-431-21	SWITCH, TACTILE
S4107	1-692-431-21	SWITCH, TACTILE
S4108	1-692-431-21	SWITCH, TACTILE
S4109	1-692-431-21	SWITCH, TACTILE
<u>VARISTOR</u>		
VDR460	1-804-995-11	VARISTOR
<u>ACCESSORIES AND PACKING</u>		
	A-1227-139-A	ACCESSORY ASSEMBLY (LATIN SOUTH MODELS ONLY)
	A-1223-265-A	ACCESSORY ASSEMBLY (LATIN NORTH MODELS ONLY)
*	4-041-259-14	BAG, PROTECTION
*	3-094-039-01	CARTON, INDIVIDUAL
*	3-094-038-01	CARTON, INDIVIDUAL (LATIN NORTH MODELS ONLY)
	2-898-781-41	MANUAL, INSTRUCTION
*	2-666-103-01	CUSHION, LOWER
*	2-666-102-01	CUSHION, UPPER
*	2-657-860-01	BAG, PROTECTION
<u>REMOTE COMMANDER</u>		
	1-479-626-12	REMOTE COMMANDER (RM-YA005)
	9-939-697-00	BATTERY COVER (for RM-YA005)

SERVICE MANUAL

BX-1L CHASSIS

In an effort to reduce the size of this pdf file the tiled schematics are not attached to this Service Manual. To receive a complete set of the tiled schematics for this manual please submit a request to:

Service_Promotion@am.sony.com.



FD Trinitron
WEGA[®]

Operating Instructions

KV-25FS150

KV-29FS150

For Your Convenience

Please contact Sony directly if you:

- Have questions on the use of your television after reading your manual
- Experience difficulty operating your television

Contact Sony Customer Support at:

<http://www.sony.com/tvsupport>

or call the phone number that appears on your warranty card.

Sony will work to resolve your questions more quickly than your retailer or place of purchase.

Please Do not Return the Product to the Store

WARNING

To reduce the risk of fire or electric shock, do not expose the TV to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Note to the CATV Installer

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

SAFETY PRECAUTIONS

- ☐ Operate the TV only on 120 V AC.
- ☐ One blade of the power plug is wider than the other for safety purposes and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- ☐ If any liquid or solid object falls into the TV, unplug it and have it checked by qualified personnel before operating it further.

CAUTION

When using TV games, computers, and similar products with your TV, keep the brightness and contrast functions at low settings. If a fixed (non-moving) pattern is left on the screen for long periods of time at a high brightness or contrast setting, the image can be permanently imprinted onto the screen. Continuously watching the same channel can cause the imprint of station logos onto the TV screen. These types of imprints are not covered by your warranty because they are the results of misuse.



To reduce the risk of electric shock, do not use this polarized plug with an extension cord, receptacle, or other outlet unless the blades can be fully inserted to prevent blade exposure.



Pursuant to FCC regulations you are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

NOTIFICATION

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ☐ Reorient or relocate the receiving antennas.
- ☐ Increase the separation between the equipment and receiver.
- ☐ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ☐ Consult the dealer or an experienced radio/TV technician for help.

Protecting the TV

- ☐ To prevent internal heat build-up, do not block the ventilation openings.
- ☐ Do not install the TV in a hot or humid place, or in a place subject to excessive dust or mechanical vibration.

Note on Closed Captions (CC)

This television receiver provides display of television closed captioning in accordance with § 15.119 of the FCC rules.

Use of this television for other than private viewing of programs broadcast on UHF or VHF or transmitted by cable companies for the use of the general public may require authorization from the broadcaster-cable company and/or program owner.

Owner’s Record

The model and serial numbers are located on the front cover of this manual and at the rear of your TV.

Trademarks and Copyrights

ENERGY STAR® is a registered mark.



Sony, FD Trinitron, WEGA®, Steady Sound and Intelligent Picture are Sony Corporation’s trademarks.

IMPORTANT SAFEGUARDS

For your protection, please read these instructions completely, and keep this manual for future reference. Carefully observe and comply with all warnings, cautions and instructions placed on the set, or described in the operating instructions or service manual.

WARNING

To guard against injury, the following basic safety precautions should be observed in the installation, use, and servicing of the set.

USE

Power Sources

This set should be operated only from the type of power source indicated on the serial/model plate. If you are not sure of the type of electrical power supplied to your home, consult your dealer or local power company. For those sets designed to operate from battery power, refer to the operating instructions.



Grounding or Polarization

This set may be equipped with a polarized alternating current line plug (a plug having one blade wider than other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

For the set with a polarized AC power cord plug

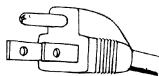
This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the polarized plug by forcing it in.



Alternate Warning

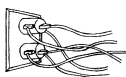
For the set with a three-wire grounding type AC plug

This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the grounding plug.



Overloading

Do not overload wall outlets, extension cords or convenience receptacles beyond their capacity, since this can result in fire or electric shock.



Always turn the set off when it is not to be used. When the set is left unattended and unused for long periods of time, unplug it from the wall outlet as a precaution against the possibility of an internal malfunction that could create a fire hazard.

Do not disconnect the antenna or the power cord during a heavy storm. Lightning may strike while you are holding the cable or cord, causing serious injury. Turn off your TV and wait for the weather to improve.

Object and Liquid Entry

Never push objects of any kind into the set through the cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the set.



Attachments

Do not use attachments not recommended by the manufacturer, as they may cause hazards.

Do not place any objects, especially heavy objects, on top of the set. The object may fall from the set, causing injury.



Cleaning

Unplug the set from the wall outlet before cleaning or polishing it. Do not use liquid cleaners or aerosol cleaners. Use a cloth lightly dampened with water for cleaning the exterior of the set.



If a snapping or popping sound from a TV set is continuous or frequent while the TV is operating, unplug the TV and consult your dealer or service technician. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off.



Installation

Always use two or more people to lift or move the set. The set is heavy and the bottom surface is flat. Serious injury can result from trying to move the set by yourself alone, or from unsteady handling.

Install the set on a stable, level surface.

Water and Moisture

Do not use power-line operated sets near water — for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.



Accessories

Do not place the set on an unstable cart, stand, tripod, bracket, table, or shelf. The set may fall, causing serious injury to a child or an adult, and serious damage to the set. Use only a cart or stand recommended by the manufacturer for the specific model of TV. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



Never cover the slots and openings with a cloth or other materials.

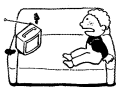
Ventilation

The slots and openings in the cabinet and in the back or bottom are provided for necessary ventilation. To ensure reliable operation of the set, and to protect it from overheating, these slots and openings must never be blocked or covered.

❑ Never cover the slots and openings with a cloth or other materials.



- ❑ Never block the slots and openings by placing the set on a bed, sofa, rug or other similar surface.



- ❑ Never place the set in a confined space, such as a bookcase or built-in cabinet, unless proper ventilation is provided.



- ❑ Do not place the set near or over a radiator or heat register, or where it is exposed to direct sunlight.



Power-Cord Protection

Do not allow anything to rest on or roll over the power cord, and do not place the set where the power cord is subject to wear or abuse.



ANTENNAS

Outdoor Antenna Grounding

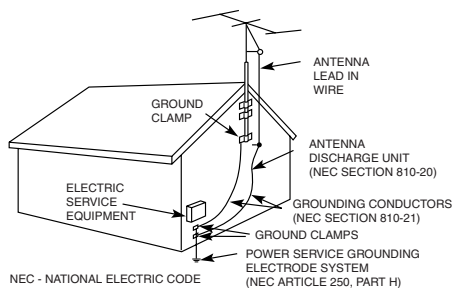
If an outdoor antenna is installed, follow the precautions below. An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits.

WHEN INSTALLING AN OUTDOOR ANTENNA SYSTEM, EXTREME CARE SHOULD BE TAKEN TO KEEP FROM CONTACTING SUCH POWER LINES OR CIRCUITS AS CONTACT WITH THEM IS ALMOST INVARIABLY FATAL.

Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code (NEC) in USA and Section 54 of the Canadian Electrical Code in Canada provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Antenna Grounding According to the NEC

Antenna Grounding According to the National Electrical Code, ANSI/NFPA 70.



Lightning

For added protection for this television receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage to the receiver due to lightning and power-line surges.

SERVICE

Damage Requiring Service

Unplug the set from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- ❑ When the power cord or plug is damaged or frayed.



- ❑ If liquid has been spilled into the set or objects have fallen into the product.



- ❑ If the set has been exposed to rain or water.



- ❑ If the set has been subject to excessive shock by being dropped, or the cabinet has been damaged.



- ❑ If the set does not operate normally when following the operating instructions. Adjust only those controls that are specified in the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the set to normal operation.



- ❑ When the set exhibits a distinct change in performance — this indicates a need for service.

Servicing

Do not attempt to service the set yourself since opening the cabinet may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.



Replacement Parts

When replacement parts are required, be sure the service technician certifies in writing that he has used replacement parts specified by the manufacturer that have the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock, or other hazards.



Safety Check

Upon completion of any service or repairs to the set, ask the service technician to perform routine safety checks (as specified by the manufacturer) to determine that the set is in safe operating condition, and to so certify. When the set reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask a qualified service technician to dispose of the set.

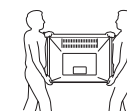


CARRYING THE TV

Carry the TV in the specified manner.

If you carry the TV in a manner other than that specified and without the specified number of persons, it may drop and serious injury may result.






- ❑ Carry the TV with holding the upper and bottom frames of the TV as illustrated.



- ❑ When transporting, do not subject the TV to shocks or vibrations, or excessive force.

- ❑ When lifting or moving the TV be sure to hold the panel firmly as illustrated. Place your palm directly under the panel, from the rear of the TV.

Contents

Introduction	1
About this Manual.....	1
Batteries for the Remote Control	1
Front Panel Menu Controls	1
Using the Remote Control	2
Remote Control Description.....	2
Connecting your TV	3
TV Rear Panel.....	3
Basic Connections	4
Connecting Additional Equipment.....	5
Using Basic Functions	7
Setting Up the TV.....	7
Using the Remote Control to Navigate the On-Screen Menus	7
Introducing the WEGA GATE Navigator.....	8
Listening to the FM Radio	9
Using the Picture  Menu	10
Using the Sound  Menu	11
Using the Channel Setup  Menu	12
Using the Parental Control  Menu	13
Using the Setup  Menu	14
Other Information	15
Troubleshooting.....	15
Specifications	17
Index	18

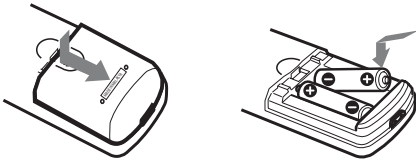
Introduction

Congratulations on your purchase of the Sony FD Trinitron WEGA®.




About this Manual

This manual provides instructions to help you enjoy your new TV. It shows you how to connect to an antenna or cable, VCR, DVD or satellite receiver. Once your TV is connected, follow the instructions and use the remote control to access the on-screen menus.

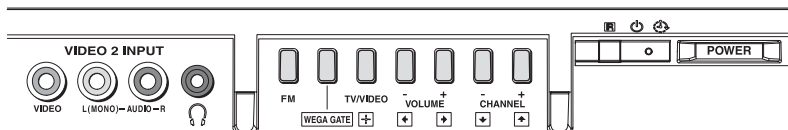
Batteries for the Remote Control








Insert two AA batteries (supplied) into the remote control using the following illustration as a guide.


-  Under normal conditions, batteries will last up to six months. If the remote control does not operate properly, the batteries might be worn out.
-  If you will not be using the remote control for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
-  Check the orientation of the batteries.

Front Panel Menu Controls



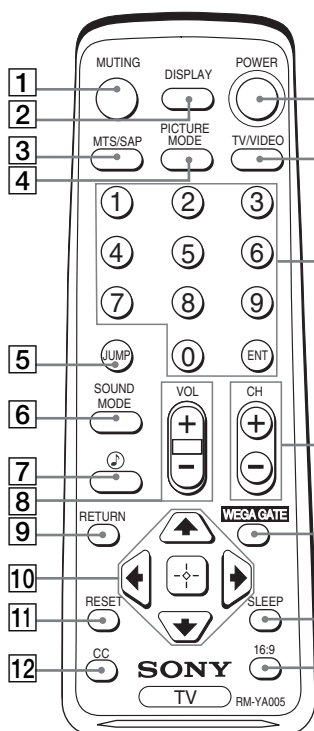
The Front Panel allows you to connect Audio/Video cables (not included) as well as headphones.

- ☐ Press the POWER button to turn the television on or off.
- ☐ Press the **WEGA GATE** button to make the Menu appear on the screen.
- ☐ Use the  (TV/VIDEO),   (- VOLUME +),  and  (- CHANNEL +) buttons to navigate through the menus and to select options. The front panel controls also allow you to change the channel, adjust the volume, change the video inputs and listening the FM Radio.

-  To navigate the menus with the remote control, see "Using the Remote Control to Navigate the On-Screen Menus" on page 7.

Using the Remote Control

Remote Control Description



Button	Description
1 MUTING	Press to turn off the sound. Press again or press VOL to restore the sound.
2 DISPLAY	Press once to display the channel number, the channel label (if set) and the status of the stereo mode.
3 MTS/SAP	Press to scroll through the MTS options: Stereo, Auto SAP and Mono (see page 11).
4 PICTURE MODE	Press repeatedly to step through the available video picture mode options: Vivid, Standard and Personal (see page 10).
5 JUMP	Press to jump back and forth between two channels. The television changes to the last channel which was tuned in for at least 5 seconds.
6 SOUND MODE	Allows you to select between options for sound effects.
7	Press for a direct selection of Effect settings: Surround, Simulated and Off (see page 11).
8 VOL (volume)	Press (+) or (-) to adjust the volume.
9 RETURN	Allows you to return to the previously selected menu level.
10	Press the arrow buttons to move the cursor in the on-screen menus. Press the center button to select or access an option.
11 RESET	Press to return the factory settings while in an on-screen menu.
12 CC	Allows you to select three subtitle modes.
13 POWER	Press to turn on/off the TV.
14 TV/VIDEO	Press to cycle through the available video inputs.
15 0-9 and ENT	Press 0-9 ; the channel changes after 2 seconds. Press ENT to change channels immediately.
16 CH (channel)	Press to change the channel.
17 WEGA GATE	Show the WEGA GATE menu. Press again to exit the menu.
18 SLEEP	Press repeatedly until the TV displays the time in minutes (15, 30, 45, 60, 75 or 90) that you want the TV to remain or before shutting off automatically. Cancel by pressing until Sleep Off appears.
19 16:9 (vertical compression)	Provides an improved resolution of the picture.

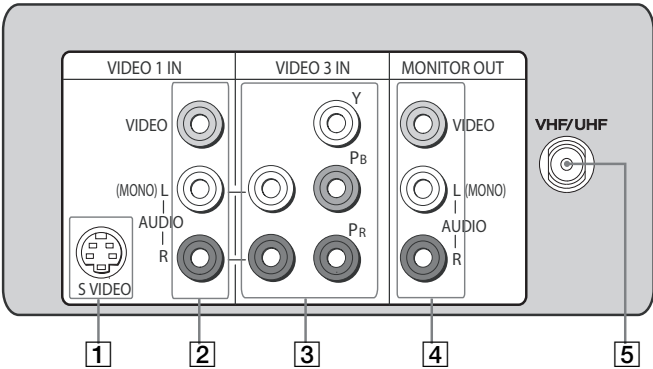


If you lose your remote control, see page 15.

Connecting your TV

Read this section before setting up your TV for the first time. This section covers basic connections in additions to any optional equipment you may be connecting.

TV Rear Panel

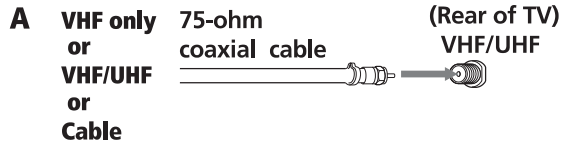


Jack	Description
1 S VIDEO	This input connects to the S VIDEO OUT jack on your VCR or other video equipment that has S VIDEO. S VIDEO provides better picture quality than the VHF/UHF jacks or the video input jack. S VIDEO does not provide sound, so you still must connect the audio cables.
2 VIDEO/AUDIO L(MONO)/R	This input connects to the AUDIO/VIDEO output jacks on your VCR or other video equipment. A third video input (VIDEO 2) jack is located on the front panel of the TV. These AUDIO/VIDEO IN connections provide a better quality image than the VHF/UHF connection.
3 YPBPr/ L, R	This input connects to the component video YPBPr and AUDIO L, R jacks on your DVD Player or digital set-top box (480i only).
4 MONITOR OUT	Allows you to record the program you are watching to a VCR. By connecting two VCRs, you can use the television as a monitor for video editing.
5 VHF/UHF	Connects to your VHF/UHF antenna or cable.
S VIDEO provides better picture quality than the VHF/UHF jacks or the video input jack.	

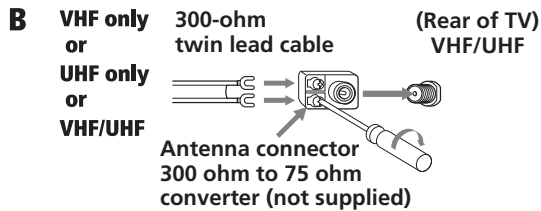
Basic Connections

TV with Cable, Indoor or Outdoor Antenna

Depending on the cable available in your home, choose one of the connections below:



Use this to connect the TV to a cable system or an antenna with a 75-ohm cable.



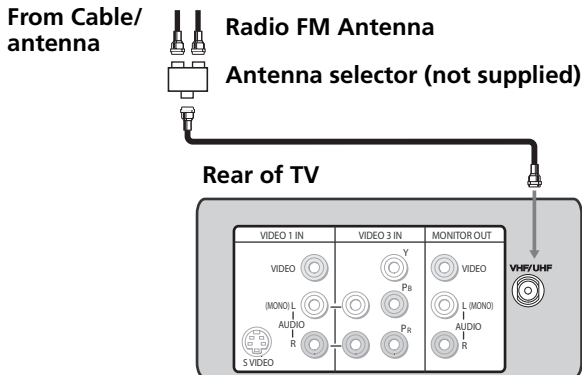
Use this to connect the TV to a dipole antenna, also known as a “rabbit ears antenna”.



If you connect the television to an interior or exterior antenna, you may have to adjust the orientation of the antenna to get better reception.

TV with FM Radio Antenna

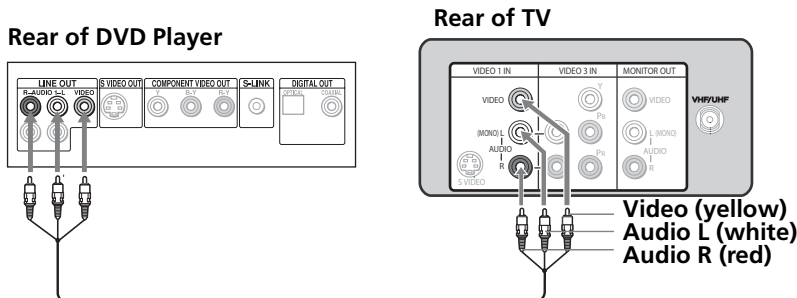
To improve the FM Radio frequency in your TV, use the connection below:



Connecting Additional Equipment

Connecting a DVD Player using Composite Video (VIDEO/AUDIO L(MONO), R)

Use audio/video cables (not supplied) connect AUDIO/VIDEO OUT on your DVD player to VIDEO IN on your TV.

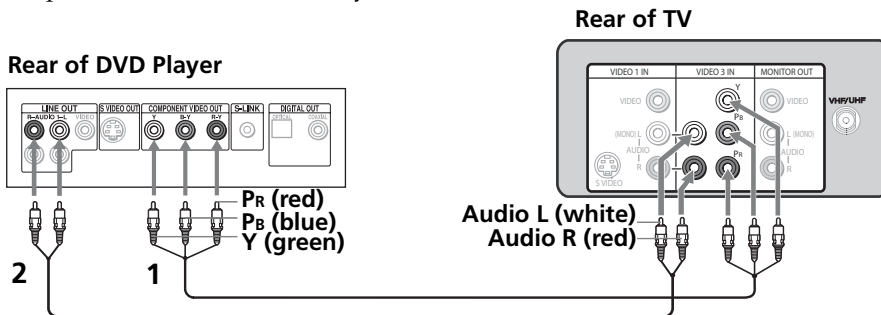


Optional connection

- ❑ For better picture quality, use S VIDEO instead of the yellow video cable. S VIDEO does not provide sound, so you still must connect the audio cables

Connecting a DVD Player using Component Video (YPbPr/R,L)

If your DVD player is equipped with video outputs (YPbPr), you can improve the picture quality by using component video cables (480i only).



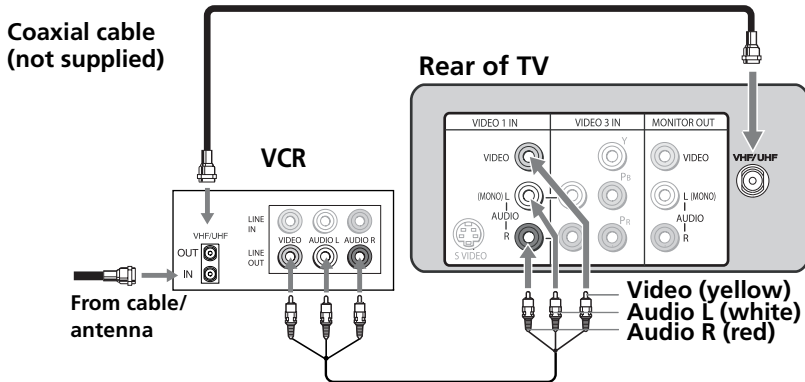
- 1 Connect YPbPr OUT on your DVD Player to YPbPr IN on your TV using component video cables (not supplied).
- 2 Connect AUDIO OUT on your DVD player to AUDIO IN on your TV.



The YPbPr outputs on your DVD player are sometimes labeled Y, CB and CR or Y, B-Y, and R-Y. If so, connect the cables to like color of the jacks.

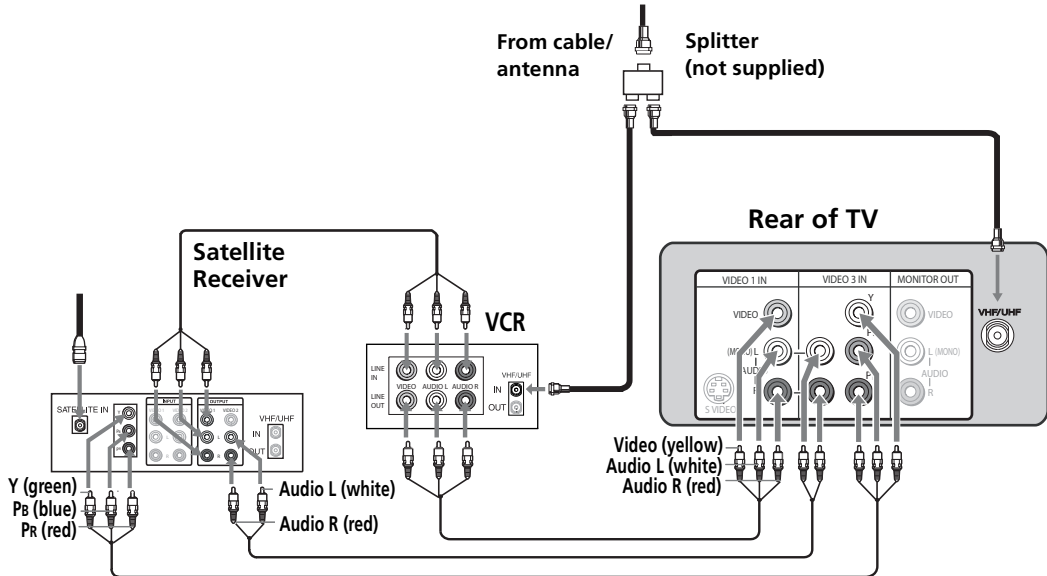
Connecting a TV and VCR

- 1 Connect the coaxial cable from your TV antenna or cable service to the IN jack on your VCR.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF/UHF jack on the TV.



You can use the button to change between the VHF/UHF and VIDEO inputs.

Connecting a TV, VCR and Satellite Receiver using Component Video (YPbPr R/L)



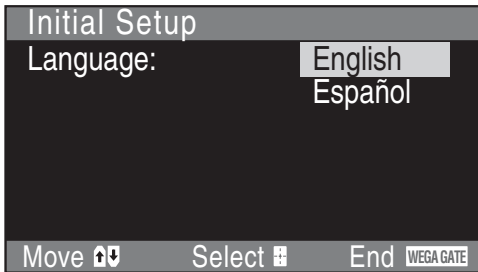
To view from the satellite receiver or VCR, select the video input to which your satellite receiver or VCR is connected by pressing on the remote control.

The satellite receiver and cable service are pay television systems.

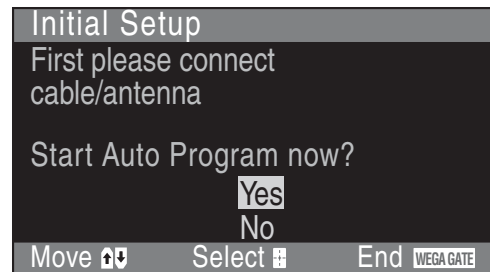
Using Basic Functions

Setting Up the TV

After you have finished connecting your TV, use Auto Program to set up your analog and digital channel lists. During Auto Program, the TV will automatically search for available channels and program receivable channels.



- 1 Press \uparrow or \downarrow to select the desired menu language, then press \oplus .



- 2 Press \downarrow or \uparrow to select **Yes**, then press \oplus to preset the channels automatically. To skip automatic channel presetting, select **No**, then press \oplus .

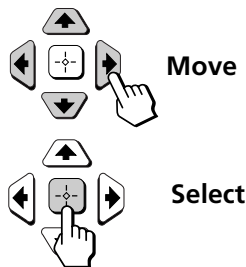
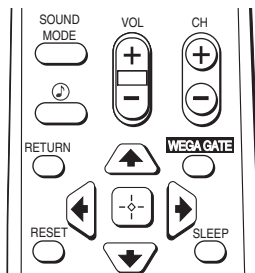


The Initial Setup screen appears each time until you select **No** on Display this menu next time option.

To perform Auto Program again

- 1 Press WEGA GATE .
- 2 Press \downarrow to highlight Settings menu.
- 3 Press \downarrow to highlight Channel Setup. Press \oplus to select.
- 4 Press \downarrow to highlight Auto Program. Press \oplus to select.
- 5 Press \downarrow or \uparrow to highlight Yes. Press \oplus to search for channels.
- 6 After Auto Program finishes, press WEGA GATE to exit.

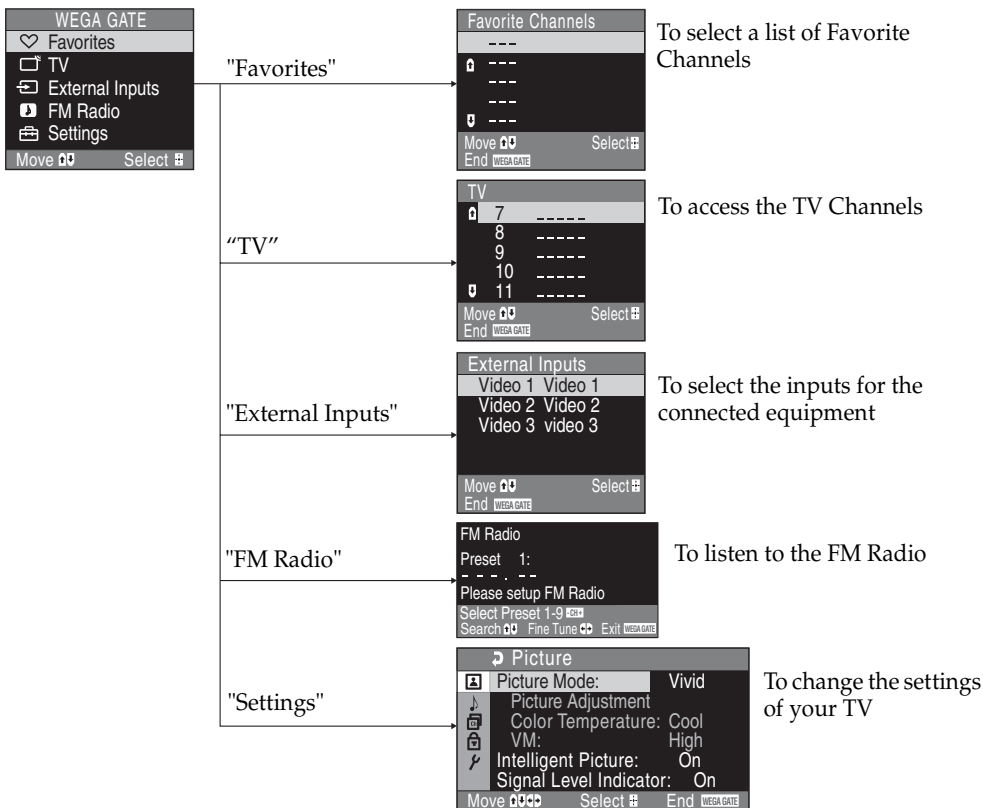
Using the Remote Control to Navigate the On-Screen Menus



To navigate on the on-screen menus, use the "arrow" buttons (\uparrow , \downarrow , \leftarrow , \rightarrow) to move the cursor. Pressing these arrows will cause the cursor to move in the corresponding direction. Pressing center button \oplus will allow you to select an option.

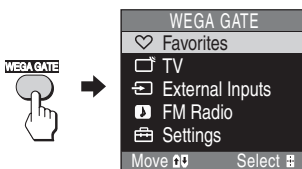
Introducing the WEGA GATE Navigator

WEGA GATE is a gateway that allows you to access to preset list of Favorites channels, TV channels, connected external inputs, listening FM Radio and "Settings".

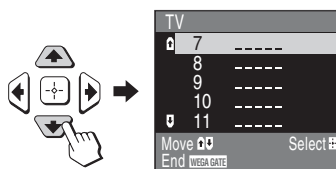


How to use WEGA GATE

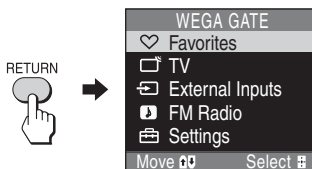
- 1 Press WEGA GATE to display or cancel the WEGA GATE menu.



- 2 Press \oplus or \rightarrow to confirm your selection or press \uparrow or \downarrow to go to the next level.



- 3 Press \uparrow or \downarrow to select the desired item.



- 4 Press RETURN or \leftarrow to move to the previous level or press WEGA GATE to exit the menu.




Listening to the FM Radio

You are able to listen to the FM Radio stations using your TV.

To Access to FM Radio Mode:

- 1 Press  and select "FM Radio", or
- 2 Press FM button on the front control panel (see page 1).

To Exit From FM Radio Mode:

- 1 Press , select the desired items: "TV" or "External Inputs", then press . Select the desired TV channel or external inputs and press , or
- 2 Press FM button on the front control panel





Listening to Preset Stations

- 1 Access to FM Radio Mode.
- 2 Press  and select "Settings".
Preset the desired FM radio stations in "FM Radio Setup" from "Channel Setup" menu.
- 3 Exit from "Channel Setup" menu by pressing . The selected preset FR radio station number and label will appear on the screen.





You can also use the ①-⑨ on the remote control to directly select the desired preset FM radio station.

Listening to Non-Preset Stations

- 1 Access to FM Radio mode.
- 2 Press  or  to search for the desired FM radio station. The preset number and label will not be displayed.
- 3 If the station has a weak signal, press  or  to fine tune the radio frequency manually.

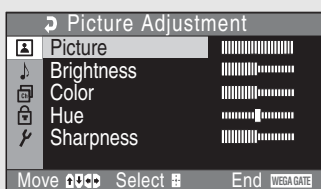
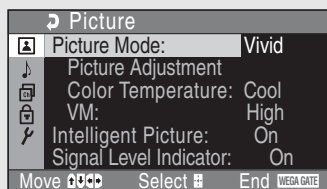


You can only operate , ,  and  functions using the remote control buttons in FM Radio mode.



The available radio frequency is only for temporary listening pleasure and cannot be stored in the memory.

Using the Picture Menu



Press **↓** to highlight an option; then press **⊕**.

Picture Mode

Customized picture viewing

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕** to select it.

Vivid: Select for enhanced picture contrast and sharpness.

Standard: Select for a standard picture.

Custom: Select to get access for adjusting Picture and Color Temperature Settings.



The options for adjusting the Picture, Color Temperature and VM settings are only available when Picture Mode is set to the Custom option.



Press **PICTURE MODE** on the remote control to directly select Picture Mode (Vivid, Standard and Custom).

Picture Adjustment

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕** to select it.

Contrast: Press **←** to decrease the contrast. Press **→** to increase the contrast.

Brightness: Press **←** to darken the picture. Press **→** to brighten the picture.

Color: Press **←** to decrease color saturation. Press **→** to increase color saturation.

Hue: Press **←** to increase the red tones. Press **→** to increase the green tones.

Sharpness: Press **←** to soften the picture. Press **→** to sharpen the picture.

Color Temperature

White intensity adjustment

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕** to select it.

Cool: Gives white colors a blue tint.

Neutral: Gives white colors a neutral tint.

Warm: Gives white colors a red tint.

VM

Velocity Modulation

Sharpens picture definition to give objects a crisp edge. Use the **↑** or **↓** buttons to select from one of the following options: High, Low, No. Then press **⊕**.

Intelligent Picture

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕** to select it.

On: Select this option to get a better picture quality on channels with a noisy signal.

Off: Select this option to turn off Intelligent Picture.

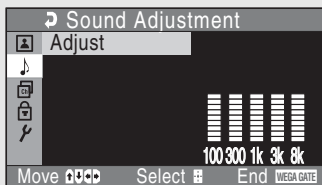
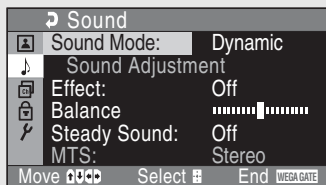
Signal level Indicator

Use the **↑** or **↓** buttons to highlight one of the following options, then press **⊕**.

On: Select this option if you want your TV displays indicator bar of the reception signal level of Video or current TV channel.

Off: Select this option if you do not want your TV displays indicator bar of the reception signal level of Video or current TV channel.

Using the Sound 🎵 Menu



Press **↓** to highlight an option; then press **⏏**.

Sound Mode Select any of the modes: “**Dynamic**” (low and high tones), “**Standard**” (voice and high tones), or “**Custom**” (adjusts the settings to your preference).

The Sound Adjustment option is only available when Sound Mode is set to Custom.

In Video you cannot access MTS.

Effect Use the **↑** or **↓** buttons to highlight one of the following options, then press **⏏** to select it.

Surround: Simulates theater quality sound for stereo programs.

Simulated: Simulates the stereo sound of movie theaters for mono programs.

Off: Mono or normal stereo reception.

Press to directly select Effect settings (Surround, Simulated, Off).

Balance Press **←** to emphasize the left speaker. Press **→** to emphasize the right speaker.

Steady Sound Use the **↑** or **↓** buttons to highlight one of the following options, then press **⏏** to select it.
Stabilizes volume

On: Select to stabilize the volume when changing channels.

Off: Select to turn Steady Sound off.

MTS Use the **↑** or **↓** buttons to highlight one of the following options, then press **⏏**.
Multi-Channel TV Sound

Stereo: Select when viewing a broadcast in stereo.



Auto SAP: Select to have the TV automatically switch to a Second Audio Program (SAP) when a signal is received.

Mono: Select to reduce noise in areas of poor reception.

Press to directly select MTS settings (Stereo, Auto SAP and Mono).











Using the Channel Setup Menu







Press  to highlight an option; then press .

Favorites Channels




Quick access to favorite channels

- 1 Press  or  to highlight the position (1 to 8) where you want to set a favorite channel, then press .
- 2 Press  or  to find the channels you want to add to your favorite channels.
- 3 Press  to select the channel. The TV will automatically change to the selected channel and assign it to the selected position (1 – 8).
- 4 To remove a channel from the Favorite Channels menu select the channel while pressing  and then press .
- 5 Press  to return to the Channel Setup menu or press  to exit.



To use the Favorite Channels option: Exit all the menus and press .
Press  or  to move the cursor to the desired channel number and press .

Cable

Use the  or  buttons to highlight one of the following options, then press  to select it.

On: Select if you are receiving cable channels with a CATV cable.

Off: Select if you are using a TV antenna.
















After changing the Cable setting the first time, you will need to run Auto Program.

Auto Program

Perform Auto Program whenever setting up your TV. Auto Program will search for available channels and program receivable channels.

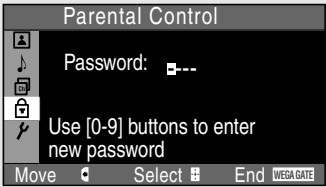
Channel Edit

Use this function after executing Auto Program to remove channels you don't want or to add new channels.

- 1 Press  or  to select the position of the desired channel and then press .
- 2 Press  to select "Name" and then press  or  to show the first letter or number of the label and then press . To move to the next space. Repeat this process until you have selected all of the letters.
- 3 Press  to show "Skip" and then press . Press  or  to select "Yes" if you want to delete the channel or "No" if you want to activate the channel.
- 4 Press  to return to the Channel Setup menu or press  to exit.

FM Radio Setup	<p>Preset up to nine FM radio stations.</p> <p>You can manually preset FM radio stations that can be received in your area and then store the radio frequency of the desired FM radio stations.</p> <ol style="list-style-type: none"> 1 Press ▲ or ▼ to select the desired FM radio station position, then press [+]. 2 Press ▲ or ▼ to search the FM radio stations. Searching stops automatically when a station is tune in. If the station has a weak signal, press ◀ or ▶ to fine tune the radio frequency manually, then press [+] to store the FM radio station. 3 You may edit the FM radio station label. Press ▲ or ▼ to select alphanumeric characters for the label, then press [+]. 4 Repeat steps 1 trough 3 to preset other FM radio stations.
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Using the Parental Control Menu

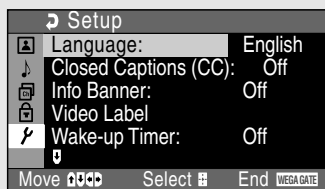




Use the **0-9** buttons to enter a 4-digit password.























Select one of the following options:

Channel Block	Off: Gives access to the blocked channel you have selected. Custom: Allows you to block or permit access to channels.
Change Password	Use the 0-9 buttons to create a new 4-digit password.

Using the Setup Menu



Press  to highlight an option; then press .

Language	Display all menus in the language of your choice. Use the  or  buttons to select from one of the following options: English and Español (Spanish). Then press  .
Closed Captions (CC) <i>Closed captioning</i>	Allows you to select from three closed-caption modes for programs that are broadcast with closed captioning. Use the  or  buttons to highlight one of the following options, then press  to select it. Off: Caption Vision is not activated. CC1, 2, 3, 4: Displays printed dialog and sound effects of a program. Text 1, 2, 3, 4: Display newtork/station information.
Info Banner	Displays the name of the current program and its remaining time (if available). Use the  or  buttons to highlight: On or Off . Then press  .
Video Label <i>Label connected equipment</i>	Allows you to identify the video components connected to the TV: VCR, DVD etc. When you press  to switch inputs, the Video Label appears on screen. 1 Press  or  to highlight the input you want to label and press  . 2 Press  or  to highlight a label and press  . 3 Press  to return to the Setup menu or press  to exit.
Wake-up Timer	Set TV to turn on automatically according to the desired period of time (from 10 minutes to 12 hours). The  indicator on TV lights up amber ones you set the wake up timer. To cancel, press until No appears.
Sleep	Press repeatedly until the TV display the time in minutes (15, 30, 45, 60, 75 or 90) that you want the TV to remain on before shutting itself off automatically. To cancel, press until Sleep Off appears.
16:9 Enhanced	Provides enhanced picture resolution for wide-screen sources such as DVD.
Tilt Correction	Use the  or  buttons to set the tilt of the picture from -5 to +5, then press  .

Other Information

Troubleshooting

If you have problems with your TV, try the suggestions below. If the problem persists, see the information at the end of this section.

General

I want to reset the TV to the factory settings	<input type="checkbox"/> Turn on the TV. While holding down the RESET button on the remote control, press the POWER button on the front panel of the TV (the TV will turn off). Release the RESET button. Turn on the television.
The TV is dirty	<input type="checkbox"/> Clean the TV with a soft dry cloth. Never use strong solvents such as alcohol or benzene, which might damage the finish of the cabinet.
There is a “Black box” on the screen	<input type="checkbox"/> You have selected a text option in the Setup Menu (page 14) and no text is available. To turn off this feature, set the Closed Captions (CC) option to Off. If you wish to see subtitles, select CC1-4 instead of Text1-4.
I forgot the Parental Control password	<input type="checkbox"/> Enter the following master access code: 4357. After using the master password, you must create a new access code. You cannot use the master to unlock currently blocked channels.

Remote Control


I cannot operate the remote control	<input type="checkbox"/> Check the orientation of the batteries. <input type="checkbox"/> The batteries may be weak. Replace them (page 1). <input type="checkbox"/> Move the TV three to four feet away from fluorescent light.
I cannot change channels with the remote control	<input type="checkbox"/> Make sure you have not inadvertently switched your TV from the channel 3 or 4 setting if you are using another device to change channels.
I lost the remote control.	<input type="checkbox"/> You can use the buttons on the front panel to access the menus (page 1). Contact your local Sony authorized dealer to request a replacement.

Picture

No picture, no sound	<input type="checkbox"/> Make sure the power cord is plugged in. <input type="checkbox"/> If a red light flashes on the front of your TV for more than a few minutes, disconnect and reconnect the power cord. If the problem continues contact your local service center. <input type="checkbox"/> Verify the TV/VIDEO setting: when watching TV, set it to TV; when you watch video, select Video 1, 2 or 3 (page 2). <input type="checkbox"/> Try another channel to make sure there is no problem with the signal.
Poor or no picture, good sound	<input type="checkbox"/> Adjust the Contrast in the Picture Menu (page 10). <input type="checkbox"/> Adjust the Brightness in the Picture Menu (page 10). <input type="checkbox"/> Check the antenna and/or cable connections (page 4).
Poor color or sharpness of the picture	<input type="checkbox"/> Adjust the Color in the Picture Menu (page 10). <input type="checkbox"/> Adjust the Sharpness in the Picture Menu (page 10). <input type="checkbox"/> Make sure that “Intelligent Picture” is set to “Off” in Picture Menu (page 10).
No color	<input type="checkbox"/> Adjust the Color in the Picture Menu (page 10).

No signal	<input type="checkbox"/> Check the Cable setting in the Channel Setup Menu (page 12). <input type="checkbox"/> Check the connections to the antenna or pay television source (page 4). <input type="checkbox"/> Make sure that the channel selected is broadcasting a signal.
Dotted lines or stripes	<input type="checkbox"/> Adjust the antenna. <input type="checkbox"/> Move the TV away from other electronic equipment. Some electronic equipment creates electrical noise, which can interfere with TV reception.
Double images or ghosts	<input type="checkbox"/> Check the outdoor antenna and its orientation, or call technical support for your pay television service.

Sound

Good picture, no sound	<input type="checkbox"/> Press  so that Muting disappears from the screen (page 2). <input type="checkbox"/> Check the Sound Mode settings. The television may be set to Auto SAP (page 11).
TV cannot receive FM Radio stations	<input type="checkbox"/> Connect a separate FM antenna and the TV channel source through an antenna selector (switch) to your TV.

Channels

I cannot receive higher number channels (UHF) when using an antenna	<input type="checkbox"/> Make sure that Cable is set to Off in the Channel Setup Menu (page 12). <input type="checkbox"/> Perform Auto Program to add channels that are not presently in the memory (page 7).
Cable stations don't seem to work	<input type="checkbox"/> Make sure that Cable is set to On in the Channel Setup Menu (page 12). <input type="checkbox"/> Perform Auto Program to add channels that are not presently in the memory (page 7).

If after reading this instruction manual you have more questions about the use of your Sony television, contact your local Sony authorized dealer to get technical assistance or visit our internet page <http://www.sony.net/>.

Specifications

Television System	American TV standard/NTSC
Channel Coverage	VHF: 2-13/UHF: 14-69/CATV: 1-125
Picture tube	FD Trinitron® tube
Power Requirements	120 V AC, 60 Hz
Accessories included	2 AA batteries 1 Remote control RM-YA005
Inputs	1 video, 1 audio (front panel) 1 S Video (rear panel) 1 YPBPR, 1 audio (rear panel) 1 VHF/UHF (rear panel) 1 video, 1 audio (rear panel)
Outputs	1 Headphone (front panel) 1 Monitor Out (rear panel)

KV-25FS150

Screen size	Actual Screen Size: 24 inches (610 mm) measured diagonally Visible Screen Size: 25 inches (635 mm) measured diagonally
Speaker output	10 W x 2
Power consumption	150 W Less than 1W in standby
Dimensions (W/H/D)	27 ¾ x 20 ¾ x 20 inches (704 x 529 x 506 mm)
Mass	74.5 lbs. (33.8 kg)

KV-29FS150

Screen size	Actual Screen Size: 27 inches (685.8 mm) measured diagonally Visible Screen Size: 29 inches (736.6 mm) measured diagonally
Speaker output	10 W x 2
Power consumption	165 W Less than 1W in standby
Dimensions (W/H/D)	30½ x 23¼ x 20 inches (774 x 590 x 506 mm)
Mass	106.6 lbs. (48.4 kg)

Design and specifications are subject to change without notice.

Index

0-9 buttons **2**
16:9 Enhanced **14**

A

Auto Program **7, 12**

B

Balance **11**
Basic Connections
 Antenna and cable **4**
 Connecting a DVD Player **5**
 Connecting a TV and VCR **6**
 Connecting a TV, VCR, and Satellite
 Receiver using Component Video
 (YPbPr R/L) **6**
Brightness **10**

C

Cable **12**
CC (Subtitles) **2**
Channel Edit **12**
Closed Captions (CC) **14**
Color **10**
Color Temperature **10**
Contrast **10**

D

DISPLAY (Screen) **2**

E

Effect
 Off **11**
 Simulated **11**
 Surround **11**

F

Favorite Channels **12**
FM Radio **9, 13**
Front Panel Menu Controls **1**

H

Hue **10**

I

Info Banner **14**
Intelligent Picture **10**

L

Language **14**

M

Menus
 Channel Setup **12**
 Parental Control **13**
 Picture **10**
 Setup **14**
 Sound **11**
MTS
 Auto SAP **11**
 Mono **11**
 Stereo **11**

P

Picture Mode
 Custom **10**
 Standard **10**
 Vivid **10**

R

Rear of TV **3**
Remote Control **2**
 Batteries **1**

S

Sharpness **10**
Sleep **2, 14**
Sound Mode **2, 11**
Specifications **17**
Steady Sound **11**

T

Tilt Correction **14**
Troubleshooting **15**

V

Video Label **14**
VM **10**

W

Wake-up Timer **14**
WEGA GATE **2**

For Your Convenience

Please contact Sony directly if you:

- Have questions on the use of your television after reading your manual
- Experience difficulty operating your television

Contact Sony Customer Support at:

<http://www.sony.com/tvsupport>

or call the phone number that appears on your warranty card.

Sony will work to resolve your questions more quickly than your retailer or place of purchase.

Please Do not Return the Product to the Store



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